PB87-188488

Superfund Record of Decision (EPA Region 2)
Combe Fill North Landfill
Mount Olive Township, New Jersey, September 1986

(U.S.) Environmental Protection Agency
Washington, DC

29 Sep 86

U.S. Department of Commerce
National Technical Information Service
NTIS

PB87-188488

United States
Environmental Protection
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Office of
Emergency and
Remedial Response

EPA/ROD/R02-86/028
Sept 1986

EPA

Superfund Record of Decision:

Combe Fill North Landfill, NJ

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15. SUPPLEMENTARY NOTES	

16. ABSTRACT

The Combe Fill North site is located in Mount Olive Township, NJ, near the intersection of U.S. Highway 206 and Interstate 80. The former landfill comprises 65 acres of the 103-acre property. The area surrounding the site is primarily wooded, with small residential areas, farms and light industry nearby. Approximately 10,000 people rely on ground water supplied from wells downgradient of the site. Between 1966 and 1978, the site operated as a sanitary municipal landfill, accepting municipal, vegetative, and non-chemical industrial wastes, along with small amounts of dry sewage sludge. From September 1978 until January 1981, the landfill was owned and operated by the Combe Fill Corporation (CFC). During this time, CFC was repeatedly cited for violations of New Jersey solid waste administration codes. In 1979, public outrage at the disposal practices of CFC led to formation of SMOTHER (Save Mount Olive Township-Halt Environmental Rape), a public action group which conducted ground water sampling and initiated procedures to include the Combe Fill North site on the NPL. During the RI, ground water, soils, leachate, sediments and surface water were sampled. Low levels of volatile organics were found in soils and leachate, and hexachlorobenzene, phenol and bis (2-ethylhexyl) phthalate were detected in low concentrations in ground water samples.

(See Attached Sheet)

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Record of Decision Combe Fill North Landfill, NJ Contaminated Media: soils, ground water Key contaminants: methylene chloride, ethylbenzene, toluene, phenol		

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16. ABSTRACT (continued)

The selected remedial action for the Combe Fill North site includes: grading and compacting the 65-acre waste disposal area; capping the landfill in accordance with appropriate solid waste management criteria; installation of a drainage system, including perimeter ditches and corrugated metal pipes; installation of a methane ventilation system; fencing the entire site; and implementation of an appropriate monitoring program to ensure the effectiveness of the remedial action. Estimated capital cost for the remedy is $10,500,000 with annual O&M costs of $168,000.

RECORD OF DECISION

REMEDIAL ALTERNATIVE SELECTION

Site Combe Fill North Landfill, Mount Olive Township, New Jersey

Documents Reviewed

I am basing my decision primarily on the following documents describing the analysis of cost-effectiveness of remedial alternatives for the Combe Fill North Landfill site:

- Combe Fill North Landfill Remedial Investigation and Feasibility Study, Ebasco Services, May 1986
- Responsiveness Summary, August 1986
- Staff Summaries and Recommendations

Description of Selected Remedy

- Grade and compact the 65-acre waste disposal area
- Cap the landfill in accordance with appropriate solid waste management criteria
- Install a drainage system, including perimeter ditches and corrugated metal pipes
- Install a methane venting system
- Construct a security fence surrounding the site
- Implement an appropriate monitoring program to ensure the effectiveness of the remedial action

Declarations

Consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, I have determined that the remedy described above, closure of the landfill in accordance with appropriate solid waste management criteria, is the cost-effective remedial action alternative for the Combe Fill North Landfill site.

It is hereby determined that implementation of this remedial action is the lowest cost alternative that is technologically feasible and reliable, and which effectively mitigates and minimizes damages to and provides adequate protection of public health, welfare and the environment. It is also hereby determined that the selected remedy is appropriate when balanced against the availability of Trust Fund monies for use at other sites.

The State of New Jersey has been consulted and agrees with the selected remedy.

September 29, 1986
Date

Christopher J. Daggett
Regional Administrator

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

COMBE FILL NORTH LANDFILL
MOUNT OLIVE, NEW JERSEY

SITE LOCATION AND DESCRIPTION

The Combe Fill North site is located on Gold Mine Road near the junctions of U.S. Highways 206 and 46 and Interstate 80 in Mount Olive Township (Figure 1). The residential communities of Netcong Boro, to the northeast, and Budd Lake, to the southwest, are both less than two miles from the site. The former landfill comprises 65 acres of the 102.8-acre property. In appearance, it forms an insignificant mound in the hilly surroundings. A dirt road borders the filled area on the south and east, and several large piles of daily cover material lie to the north and west (Figure 2). A gasoline pump near the entrance to the site implies the presence of an underground storage tank.

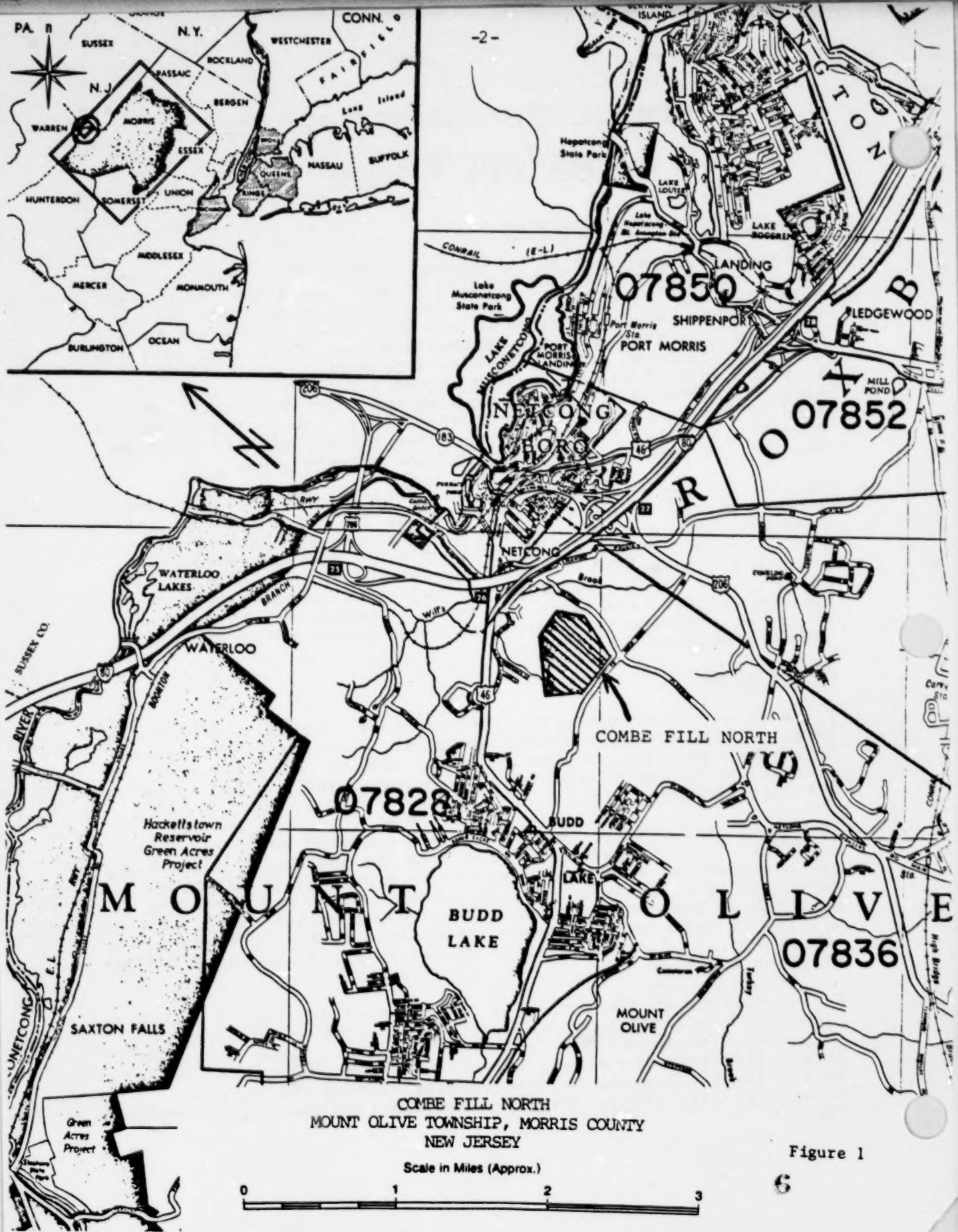
Much of the land surrounding the site is wooded; the developed areas are residential with some farming and light industry nearby. Budd Lake is a developed resort and Route 46 is highly commercialized. Approximately 10,000 people use groundwater from private wells located downgradient (northeast) and within two miles of the site. There are several small ponds on-site, and surface runoff drains into two small streams, east and west of the site, that are tributaries to Wills Brook, which empties into the Musconetcong River.

SITE HISTORY

The site was first operated as a municipal landfill beginning in 1966. It reportedly accepted municipal, vegetative, and industrial (non-chemical) wastes and small amounts of dry sewage sludge. Wastes were deposited in a marshy area and remain below the water table.

From 1969 until 1978, the landfill was operated by Morris County Landfill, Inc. It was registered with the New Jersey Department of Environmental Protection (NJDEP) on 8 January 1976. From September 1978 until January 1981, the landfill was owned and operated by Combe Fill Corporation (CFC), a wholly owned subsidiary of Combustion Equipment Associates (CEA). CFC was repeatedly cited for violations of New Jersey solid waste administration codes.

Public outrage at the operating practices of CFC led to the formation of a citizens' group called SMOTHER (Save Mount Olive Township - Halt Environmental Rape) in 1979. This group conducted groundwater sampling around the site and was influential in initiating the process for ranking the site on the National Priorities List (NPL). The site was added to the NPL in December 1982.



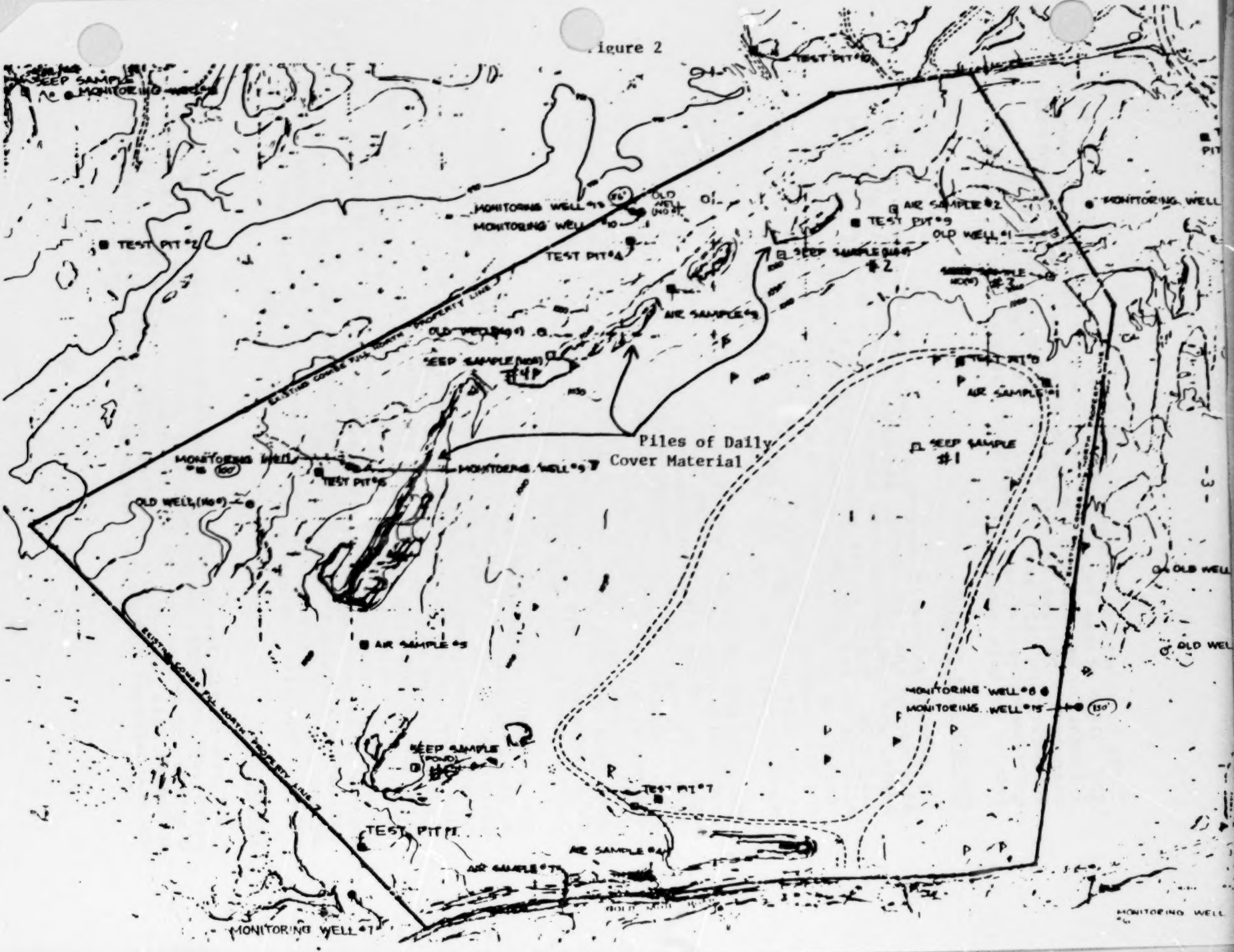
COMBE FILL NORTH
MOUNT OLIVE TOWNSHIP, MORRIS COUNTY
NEW JERSEY

Figure 1

Scale in Miles (Approx.)

0 1 2 3

igure 2


SEEP SAMPLE
MONITORING WELL
TEST PIT #2
TEST PIT #4
TEST PIT #6
TEST PIT #7
TEST PIT #9
TEST PIT #10
TEST PIT #11
MONITORING WELL #5
MONITORING WELL #6
MONITORING WELL #7
MONITORING WELL #8
MONITORING WELL #9
MONITORING WELL #10
MONITORING WELL #15
OLD WELL #1
OLD WELL (No #)
AIR SAMPLE #1
AIR SAMPLE #2
AIR SAMPLE #3
AIR SAMPLE #4
AIR SAMPLE #5
AIR SAMPLE #6
AIR SAMPLE #7
SEEP SAMPLE #1
SEEP SAMPLE #2
SEEP SAMPLE #3
SEEP SAMPLE #4
SEEP SAMPLE POND
Piles of Daily
Cover Material
EXISTING COUNTY SOUTH PROPERTY LINE
EXISTING COUNTY SOUTH PROPERTY LINE
150'
100'

There have been no remedial actions at Combe Fill North to date. The United States Environmental Protection Agency (EPA) sent information request and notice letters to all known potentially responsible parties in 1983 before beginning the Remedial Investigation (RI) and Feasibility Study (FS). A summary of enforcement activities taken to date is provided in another section of this document.

CURRENT SITE STATUS

Low concentrations of hazardous substances were found at the site during the RI. Soils, leachate, surface water, sediments, and groundwater were sampled between December 1984 and July 1985. Soils at the site were found to contain methylene chloride at 123 ppb; ethylbenzene and toluene were found in leachate at 21 ppb and 25 ppb; and hexachlorobenzene, phenol, and bis(2-ethylhexyl)phthalate were found in the groundwater at the site at 3.3 ppb, 56.6 ppb, and 49.5 ppb. The complete chemical data base from the RI is provided in Appendix 1.

The site was originally evaluated for ranking on the NPL using groundwater data collected by SMOTHER, the NJDEP, and other agencies. These data indicate that higher levels of organic chemicals may have once been present at and leaking from the site. However, since sampling methods and analytical techniques are not known and original data and supporting information do not exist, these data are of questionable quality and value. The data obtained during the RI provide the basis for the FS; these data represent the most complete assessment available of the current condition of the site.

The available chemical data, which indicate that concentrations at the site are low and that there is currently no off-site migration, do not indicate that there are human receptors currently endangered by the site. However, the site is covered with rocky, permeable soil and waste is known to exist in a shallow aquifer that is connected to a deeper aquifer that serves more than 10,000 people downgradient and within two miles of the site. In the site's present condition, this population is potentially exposed to contaminants that could enter this source of drinking water. This assessment of the site will be refined by additional sampling events conducted by the NJDEP during and after design and implementation of the selected remedy. The site was resampled on 13 August 1986.

ENFORCEMENT

The State of New Jersey and EPA have identified CFC and its parent company, CEA, as potentially responsible parties (PRPs). A notice letter was sent to CEA and over 100 other PRPs on 26 September 1983 regarding a proposed RI/FS at the site. None of the acknowledged recipients offered to undertake the study.

On 21 November 1983, EPA entered into a cooperative agreement with the NJDEP whereby the NJDEP was authorized to use Superfund money to conduct the RI/FS at the site.

On 22 January 1986, EPA filed an application in Bankruptcy Court seeking reimbursement of Superfund monies spent to date at the site from CFC, which had declared bankruptcy in October 1981. Because of the limited funds remaining in the bankrupt's estate, EPA and CFC reached a tentative settlement of the Superfund claims in May 1986. EPA has not yet initiated any enforcement actions against any other PRPs, including CEA.

ALTERNATIVE EVALUATION

Six remedial alternatives were analyzed in detail in the FS. They are listed in Table 1. Remedial objectives were developed to address the potential release of hazardous substances since there is little evidence of a significant release at this time. Potential exposure routes include contact with groundwater and surface water that could be contaminated by chemicals leaching from the landfilled waste. Hazardous substances, including methylene chloride, hexachlorobenzene, and bis(2-ethylhexyl) phthalate, are known to be present at the site. The results of a methane migration survey indicate that explosive levels of this gas may also present a hazard.

Several remedial technologies were eliminated during screening as inappropriate or infeasible for the Combe Fill North site. Complete and partial removal of wastes as well as on- and off-site treatment and relocation of residents were determined to be inappropriate to address the remedial objectives.

The remaining alternatives included no action, several variations of closing the landfill and containing the waste, and excavating the waste and returning it to improved cells. These alternatives attain federal public health and environmental standards to varying degrees, based on assumptions about the content of the landfill. All of the alternatives include the construction of a security fence surrounding the site and the implementation of a groundwater and surface water monitoring program.

No Action

This alternative includes the construction of a security fence to restrict access to potentially contaminated areas and the implementation of a long-term groundwater monitoring program to provide advance warning of increased releases of hazardous substances in the future. It employs established construction techniques, and although it does not mitigate any of the potential exposure routes, it does provide an early-warning system so that appropriate action could be taken.

Table 1

COMBE FILL NORTH LANDFILL
Summary of Remedial Alternatives

Alternative	Capital Cost ($ million)	Present Worth of O&M ($ million)°	Total Present Worth ($ million)°
No Action	0.5	0.4	0.9
Solid Waste Landfill Closure	10.5	1.6	12.1
Hazardous Waste Landfill Cap (HWLC)	23.9	4.7	28.6
HWLC and Groundwater Extraction/ Treatment	26.3	7.6	33.9
HWLC and Groundwater Diversion Barrier	35.7	5.5	41.2
On-Site Disposal in Hazardous Waste Landfill	72.3	13.7	86.0
New Water Supply*	3.8	5.9	9.7
Treated Existing Water Supply*	4.0	11.0	15.0

° Based on 10 percent interest and a 30-year time period.

* The costs of the alternate water supply options are listed separately although one would only be implemented in conjunction with a closure alternative.

Solid Waste Landfill Closure

Combe Fill North is an open dump as defined in 40 CFR Part 257, "Criteria for Classification of Solid Waste Disposal Facilities and Practices". The Resource Conservation and Recovery Act (RCRA), Subtitle D, which is relevant and appropriate to Superfund actions according to the "CERCLA Compliance With Other Environmental Statutes" policy memo of 2 October 1985, requires the states to develop solid waste management plans. The Combe Fill North Solid Waste Landfill Closure alternative complies with New Jersey's specifications for closure of sanitary landfills developed pursuant to the State plan.

The 1981 New Jersey Court order to close the Combe Fill North Landfill could not be enforced because CFC declared bankruptcy a few months after it was issued. Implementing this remedial alternative would close the dump in accordance with RCRA Subtitle D and New Jersey Administrative Code 7:26, "Nonhazardous Waste Management Regulations". The landfilled area would be graded, capped, and seeded, and a surface water drainage system, a methane venting system, and a security fence would be installed. A map showing the features of this alternative is provided in Figure 3; Figure 4 contains a detailed cross-section of the cap.

This alternative would minimize surface water infiltration, thus reducing the production of leachate. The site is currently covered with permeable backfill material and is graded in such a way that large ponds have formed, creating a hydraulic head that forces surface water into the waste deposits. The cap would also eliminate the threat of direct contact with leachate on the surface. The fence would restrict access and limit possible direct contact with hazardous materials, and the methane venting system would eliminate the explosion hazard. The waste would, however, continue to be in contact with the groundwater, so the potential for generating hazardous leachate would not be eliminated.

This alternative, which would properly close the site (an open dump) as a sanitary landfill, may attain all appropriate environmental standards. However, any sanitary landfill contains some amount of hazardous substances. As such, RCRA hazardous waste regulations may be appropriate to the site, yet there is little evidence that Combe Fill North received greater quantities of hazardous substances than any other sanitary landfill. If there is to be a distinction between the closure of sanitary and hazardous waste landfills, current data indicate that this site can be closed using techniques for the former category.

Implementation of Solid Waste Landfill Closure would utilize only proven technologies. Although increased air emissions should be expected during grading, this alternative will provide long-term benefits without negative side effects. The alternative is highly reliable and involves minimal operation and maintenance.

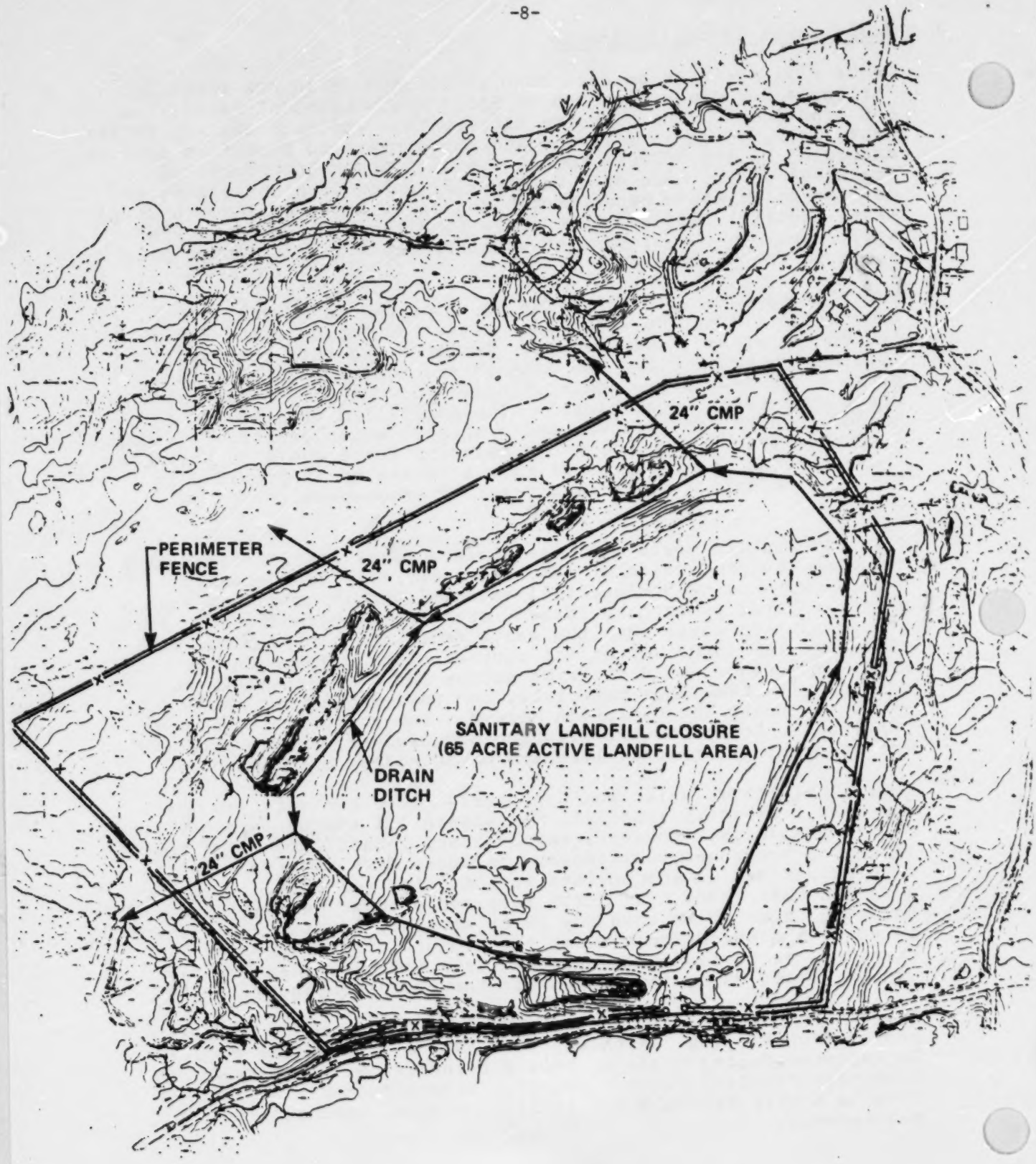
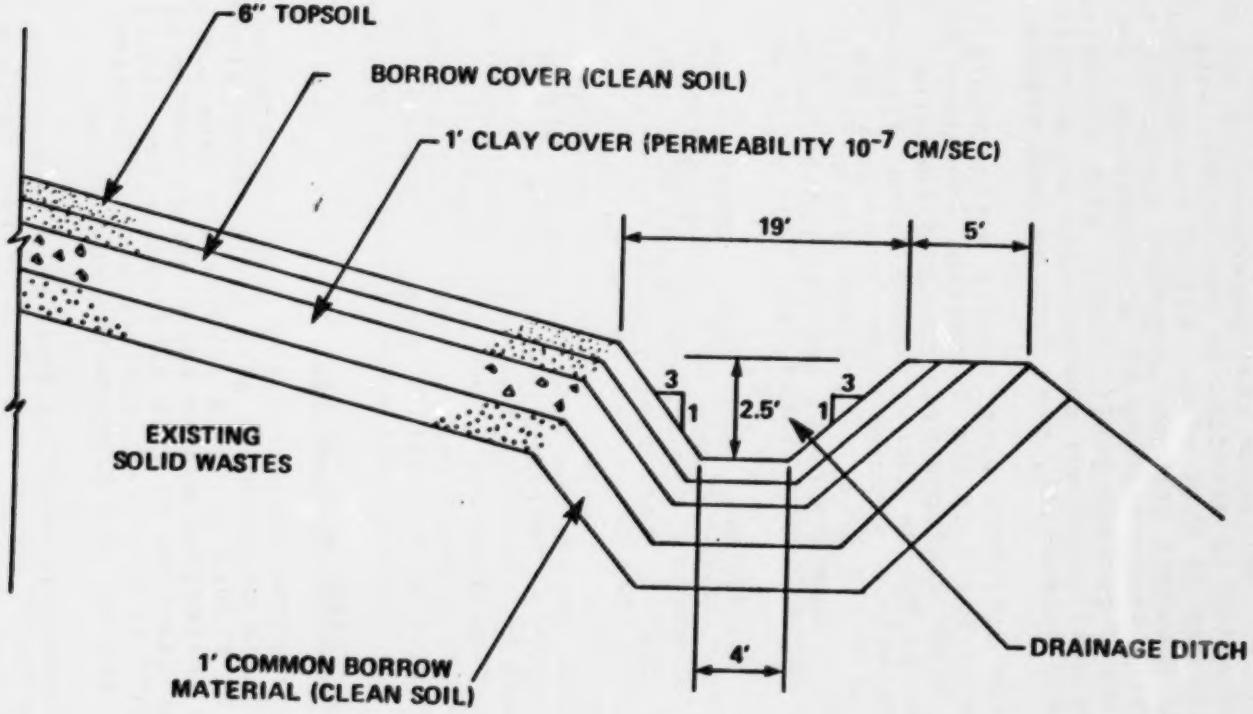

24" CMP
PERIMETER FENCE
24" CMP
SANITARY LANDFILL CLOSURE
(65 ACRE ACTIVE LANDFILL AREA)
DRAIN DITCH
24" CMP

Figure 3

Figure 4

Sanitary Landfill Cap



NOT TO SCALE

Alternate Water Supply

Two schemes for providing an alternate water supply were developed to be used in conjunction with a containment action. There is no need to implement either scheme at this time as there is no indication that potable wells are contaminated. If contamination is detected in the future, water could be supplied to residents at that time. All of the alternatives presented in this document include long-term monitoring of the groundwater to provide early warning of contamination. Providing alternate water would protect public health from contamination only in potable well supplies; contaminants could still enter the groundwater and potentially move into surface waters.

The first alternate water supply option would involve creating a new well-field in the Kittatinny limestone formation in the Drakes Brook drainage area south of the site. This area was recommended by the Morris County Master Plan - Water Supply Element as being able to provide water to satisfy the projected needs of the affected area. Established technologies would be utilized; a 21,000-foot water main, two chlorinators, two booster stations, a water distribution system, and four wells would be required.

The second alternate water supply option would involve treating the existing water supply of Netcong, Stanhope, and the Village Green Apartments. Air stripping and activated carbon could be used to treat contaminated groundwater. The decontaminated water would then be redistributed to users in the affected area. Providing an alternate water source would only be necessary if the aquifer became contaminated and private wells were threatened. If this occurs, implementing this alternative will not prevent the spread of contamination in the environment and so will not achieve compliance with other environmental statutes. It might also fail to protect public health if contaminants were discharged from the aquifer to surface waters. However, it would be reliable and would provide a safe water supply for domestic use.

Hazardous Waste Landfill Cap

This alternative would involve regrading and compacting the 65-acre dump and covering it with a clay/synthetic cap as shown at the top of Figure 7. This alternative does not include the liner/leachate collection system shown at the bottom of this figure. The other features of this alternative are similiar to the Solid Waste Landfill Closure: surface water diversion, security fence, methane venting, and groundwater monitoring.

The environmental benefits from this alternative are similar to those for Solid Waste Landfill Closure. Surface water infiltration would be more effectively restricted by this cap thereby reducing the potential of producing hazardous leachate. However, the wastes would still remain in contact with the groundwater. The implementability and reliability for this alternative are the same as for Solid Waste Landfill Closure.

This alternative would provide a more impermeable surface barrier than Solid Waste Landfill Closure, but since the wastes would remain in contact with the groundwater, this alternative does not achieve full compliance with RCRA Subtitle C, "Hazardous Waste Management". The applicability of the statute to this site has already been considered.

Hazardous Waste Cap and Groundwater Diversion

Two alternatives were developed that employ the landfill cap described in the previous alternative in conjunction with a means of reducing contact between the wastes and the aquifer. The technologies for lowering the water table are an upgradient slurry wall and a system of groundwater extraction wells. The primary benefit of both of these alternatives is that removing groundwater from the wastes will further reduce the potential for creating leachate.

A 4000-foot slurry wall, approximately 60-feet deep and anchored in bedrock, would extend from the western property boundary, along Gold Mine Road on the south, to the eastern property boundary as shown in Figure 5. A french drain upgradient of the wall would prevent groundwater from mounding at and overtopping the wall. The wall and drain would redirect groundwater around the site to prevent groundwater from infiltrating the waste.

This alternative employs well-established technologies and is highly reliable. It requires minimal operation and maintenance and offers significantly greater protection than the alternatives discussed previously by isolating the wastes from the surrounding environment. Nevertheless, hazardous substances were not detected in significant quantities in the groundwater or leachate at this site. Therefore, compliance with other environmental statutes is achieved and public health protected without implementing an alternative as extensive as this.

Hazardous Waste Cap with Groundwater Extraction

This alternative is a variation of the one discussed above. Twelve extraction wells would be pumped to lower the water table below the waste for most of the year. A map of the site indicating locations of the wells and the treatment plant is provided in Figure 6. During periods of highest water table elevations, groundwater would come into contact with the wastes. However, any hazardous leachate that may be generated would be pumped to the treatment plant before it was released. Treatment would consist of air stripping, metals removal, and activated carbon adsorption. As with the previous alternative, the current data base indicates that such extensive action is not justified.

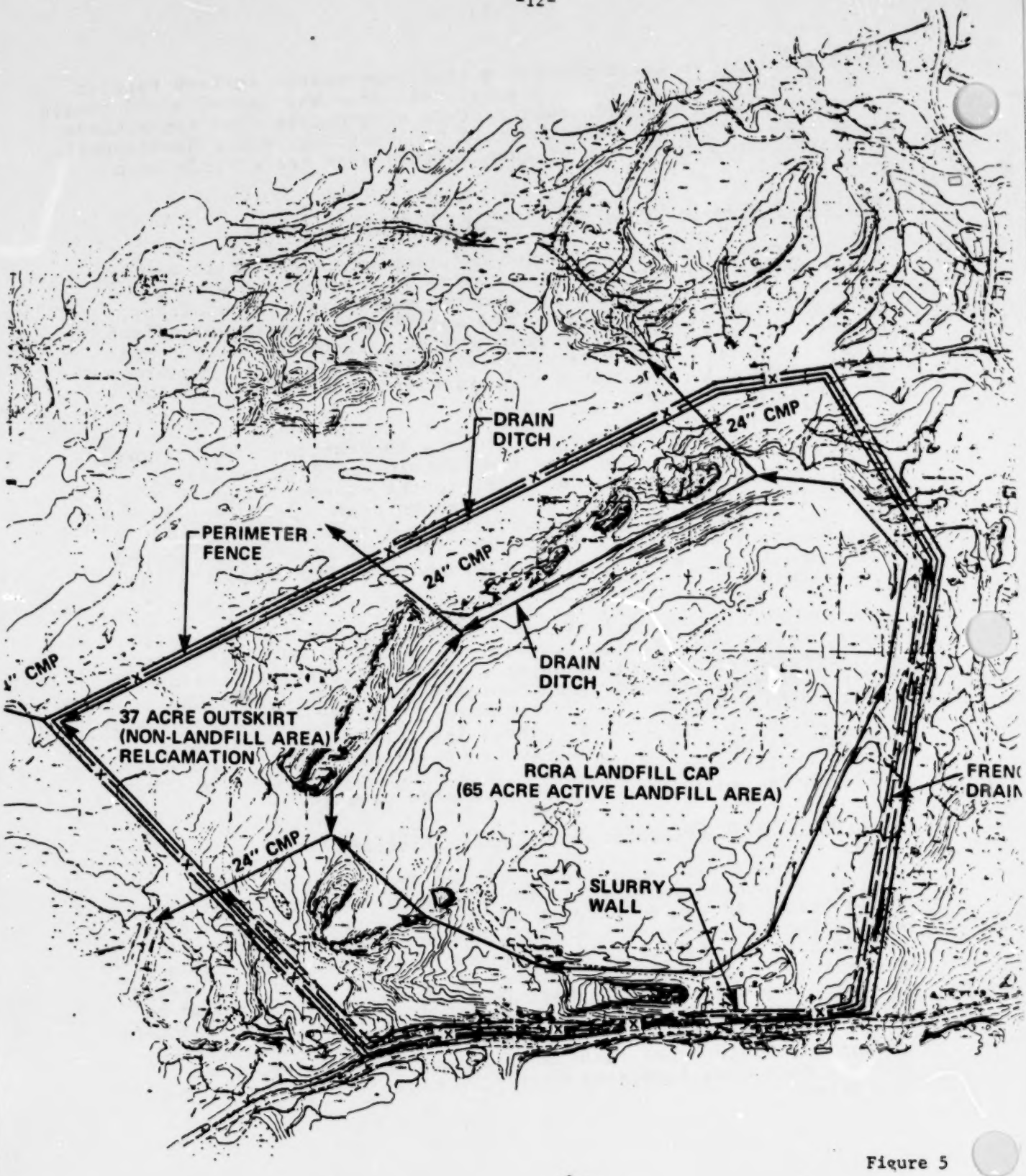

DRAIN
DITCH
24" CMP
PERIMETER
FENCE
24" CMP
DRAIN
DITCH
37 ACRE OUTSKIRT
(NON-LANDFILL AREA)
RELCAMATION
RCRA LANDFILL CAP
(65 ACRE ACTIVE LANDFILL AREA)
24" CMP
SLURRY
WALL

Figure 5

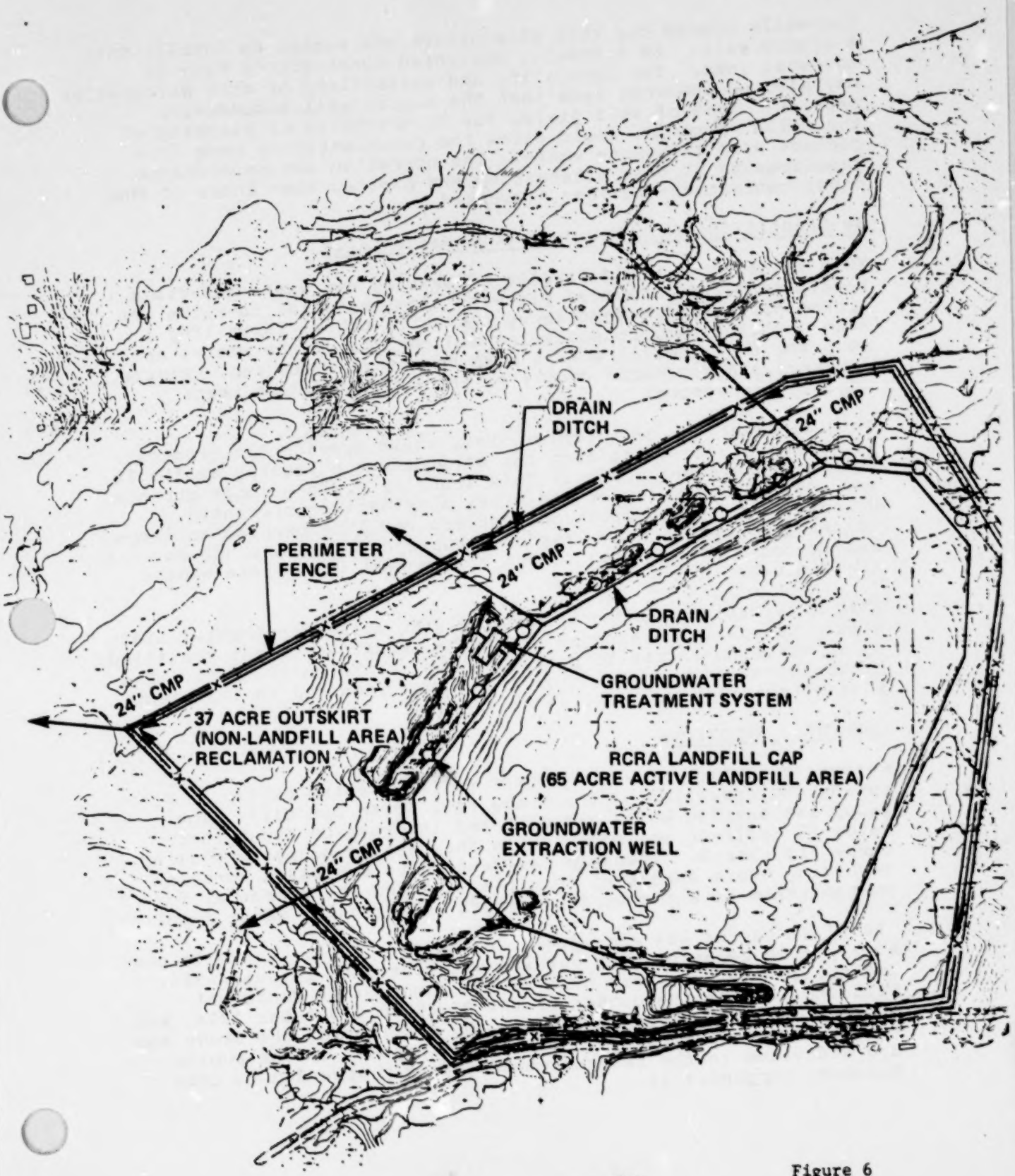

DRAIN
DITCH
24" CMP
PERIMETER
FENCE
24" CMP
DRAIN
DITCH
GROUNDWATER
TREATMENT SYSTEM
24" CMP
37 ACRE OUTSKIRT
(NON-LANDFILL AREA)
RECLAMATION
RCRA LANDFILL CAP
(65 ACRE ACTIVE LANDFILL AREA)
GROUNDWATER
EXTRACTION WELL
24" CMP

Figure 6

The wells needed for this alternative are easier to install than a slurry wall. As a result, projected construction time is somewhat less. The durability and reliability of this alternative may also be somewhat less than the slurry wall groundwater barrier. Loss of well yield, due to corroding or clogging of the wells or pumps, would allow the groundwater to come into contact with the waste again. The operation and maintenance requirements of this alternative are greater than those of the other containment actions discussed.

Re-Landfilling Into New Hazardous Waste Cells

This alternative would involve excavating the waste materials, backfilling the excavated pit with clean material to raise the ground surface five feet above the water table, installing a RCRA double liner, redepositing and compacting the waste, and covering the landfill with a RCRA hazardous waste cap. Figure 7 provides a schematic detail of the RCRA hazardous waste containment system.

This alternative, once implemented, would provide the greatest isolation of the waste from the environment currently available from a containment system. This landfill would be more durable and reliable than any of the other alternatives presented. However, during construction, workers would be exposed to large volumes of wastes, and hazardous substances that are not currently mobile could be released to the environment when these wastes are disturbed.

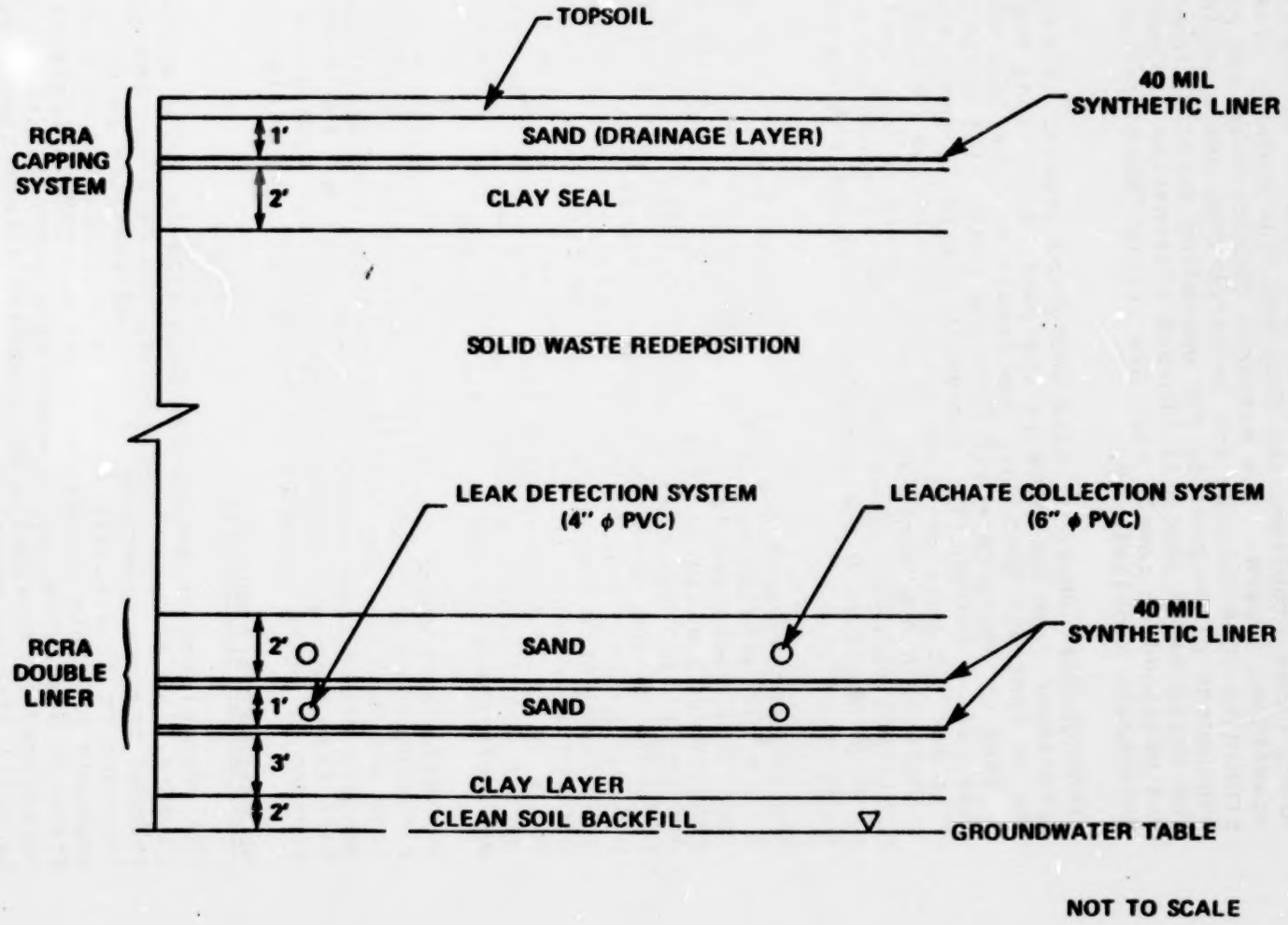
This alternative would comply fully with all environmental statutes. However, the expense of this alternative is not justified by an existing threat to public health or the environment. The technologies and construction techniques required to implement this alternative are well established.

COMMUNITY RELATIONS

Concerned citizens formed SMOTHER to involve the public in opposing the operation of the Combe Fill North Landfill. The group has sampled wells and gathered information about the site; it reflects the community's interest in properly closing Combe Fill North. Township residents have expressed concern regarding odors emanating from the site and the potential for contaminants to enter surface waters and drinking water supplies.

The RI/FS report was made public on 12 June 1986. A public comment period began on that day and was closed on 16 July 1986. Two public meetings were held at the Mount Olive Municipal Building: one at the outset of the RI/FS on 2 October 1984, and another on 1 July 1986 to discuss the findings of the study and the preferred alternative. Concerns expressed by the public are addressed in the Responsiveness Summary appended to this document (Appendix 2).

Figure 7


TOPSOIL
40 MIL
SYNTHETIC LINER
RCRA
CAPPING
SYSTEM
1'
SAND (DRAINAGE LAYER)
2'
CLAY SEAL
SOLID WASTE REDEPOSITION
LEAK DETECTION SYSTEM
(4" ϕ PVC)
LEACHATE COLLECTION SYSTEM
(6" ϕ PVC)
40 MIL
SYNTHETIC LINER
RCRA
DOUBLE
LINER
2'
SAND
1'
SAND
3'
CLAY LAYER
2'
CLEAN SOIL BACKFILL
GROUNDWATER TABLE
NOT TO SCALE

CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

The operators of the Combe Fill North Landfill were frequently cited for violating New Jersey solid waste management codes. Among other problems, the dump was not properly closed when operations ceased. The Resource Conservation and Recovery Act prohibits open dumping and requires that state solid waste management plans provide for upgrading existing open dumps. The Solid Waste Landfill Closure alternative presented previously was designed to comply with New Jersey "Nonhazardous Waste Management Regulations".

Although past chemical data indicated greater releases of hazardous substances from the site in the past, analytical results from the RI indicate that only low levels of hazardous substances are present or being released from the Combe Fill North Landfill at this time. Information currently available indicates that the site may not have received larger quantities of hazardous substances than any sanitary landfill would be expected to receive in municipal refuse. Therefore, the nonhazardous waste regulations of RCRA Subtitle D are considered relevant and appropriate to this site.

The hazardous waste cap and groundwater barrier was developed as a remedial alternative to comply with RCRA Subtitle C, hazardous waste regulations. Compliance with these more stringent requirements would be attained by utilizing a less permeable cap and preventing groundwater from infiltrating the waste. The hazardous waste cap with groundwater extraction and the hazardous waste cap alone would allow the wastes to come into contact with the groundwater for at least part of the year. Therefore, these alternatives would not ensure compliance with RCRA Subtitle C as fully as would the cap with the slurry wall. The re-landfilling option would comply with RCRA Subtitle C and would be more durable and reliable than the other alternatives.

The hazardous waste regulations in RCRA Subtitle C are not considered relevant to this site. Enforcement investigations to date have not revealed any reliable evidence that hazardous waste dumping activities occurred at the site, and the current chemical data base does not indicate that hazardous substances are present or being released in significant quantities.

RECOMMENDED ALTERNATIVE

The cost-effective remedy for this site is Solid Waste Landfill Closure. As discussed previously, the relevant and appropriate federal statute governing closure of the site is RCRA Subtitle D. Pursuant to this subtitle, and in anticipation of a stronger emphasis on state standards in the new CERCLA legislation, State of New Jersey solid waste management guidelines were considered in developing the remedial alternative. Solid Waste Landfill Closure complies with the relevant and appropriate federal statutes.

The chemical data obtained during the RI does not indicate that the landfill is releasing significant quantities of hazardous substances at the current time. Nonetheless, the No Action alternative is considered inappropriate as a permanent remedy since it does not protect against potential increased releases of contaminants into area groundwaters which are used extensively for drinking purposes.

However, Solid Waste Landfill Closure does provide adequate protection from potential releases to groundwater and surface water and is required to achieve compliance with RCRA, which prohibits open dumping and requires upgrading open dumps.

The other remedial alternatives developed in the FS are not cost-effective because they provide levels of protection that are not warranted by a chemical hazard posed by this site. All of the alternatives considered in this summary are listed in Table 1 along with their capital costs. The total present worth of each, based on 30 years' operation and maintenance is also provided.

A site layout and a cap cross-section illustrating the recommended alternative are provided in Figures 3 and 4. The features of the Solid Waste Landfill Closure are:

- °Grade and compact the 65-acre waste disposal area
- °Cover with one foot of common borrow material
- °Cap with one foot of clay (permeability $1x10^{-7}$ cm/sec)
- °Cover with sufficient common borrow material to ensure the clay cap is below the average frost penetration depth
- °Cover with six inches of topsoil
- °Plant a vegetative cover (grass seeding)
- °Install a drainage system, including perimeter ditches and corrugated metal pipes
- °Install a methane venting system
- °Construct a security fence surrounding the site
- °Implement a quarterly groundwater and surface water monitoring program

OPERATION AND MAINTENANCE (O&M)

The O&M requirements of the recommended alternative are very limited. They include mowing the grass on the landfill, visually inspecting the runoff ditches, clearing litter from the ditches, and performing sampling and analysis for the long-term monitoring program.

Both the ditches and the cap are subject to cracking. However, proper installation should minimize the possibility of this occurring.

Annual O&M should cost $168,000; the present worth of 30 years O&M is $1.6 million. Operation and maintenance will be funded as specified in CERCLA and the NCP.

SCHEDULE

Project Milestone	Date
-Approve Remedial Action	September 1986
-Initiate Enforcement Negotiations	September 1986
-Amend Cooperative Agreement for Design	Pending CERCLA Reauthorization or State Funding
-Initiate Design	Pending CERCLA Reauthorization or State Funding
-Complete Design	Pending CERCLA Reauthorization or State Funding

FUTURE ACTIONS

After the Record of Decision is signed, ongoing quarterly monitoring of surface water and groundwater will be implemented. A monitoring plan has been developed by the NJDEP and released for public comment.

APPENDIX 1

CHEMICAL DATA

Table	Media
1	Test Pits and Soil Borings
2	Leachate
3	Surface Water
4	Sediment
5	Monitoring Well Water
6	Potable Well Water

Table 1

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF TEST PIT SOIL SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
STP1	F9154	12/11/84	6.75-7.75	ND(b)			ND			ND			As	1.4	0.5
													Ba	87	0.5
													Cr	14	1
													Pb	3.6	0.5
STP-2B	K3865	10/21/85	12.5	ND			ND			ND			Sb	17	4
													As	1.3	1
													Be	0.6	0.08
													Cr	10	2
													Pb	4	0.5
													Ni	8	1
													Zn	50	30
STP-3B	K3866	10/21/85	15	ND			ND			ND			Sb	10	4
													As	1.3	1.0
													Be	0.5	0.08
													Cr	10	2
													Pb	4	0.5
													Ni	3	1
													Zn	40	30
STP-4B	K3868	10/21/85	7.5	Methylene Chloride	123	2.8	ND			ND			Sb	11	4
													As	1	1
													Be	0.4	0.08
													Cr	6	2
													Pb	28	0.5
													Ni	3	1
													Zn	40	30

DL - Detection Limit
ND - Not detected
(b) - Qualified due to hold time exceedances
STP1 - Soil from test pit #1

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF TEST PIT SOIL SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
STP5	P9155	12/11/84	7.0-8.0	ND			ND			ND			As	6.5	0.5
													Ba	39	0.5
													Cr	12	1
													Pb	6.4	0.5
STP6	P9150	12/14/84	8.5-9.0	ND(b)			ND			ND			As	1.4	0.5
													Ba	40	0.5
													Cr	8	1
													Pb	3	1
STP7	P9149	12/13/84	10.0-11.0	ND(b)			ND			ND			As	1.5	0.5
													Ba	130	0.5
													Cr	10	1
													Pb	24	0.5
STP8	P9148	12/13/84	11.0-12.0	ND(b)			ND			ND			As	1.4	0.5
													Ba	94	0.5
													Cd	3	0.5
													Cr	11	1
													Pb	67	5
													Hg	0.4	0.1
STP-9B	K3864	10/21/85	10	ND			ND			ND			Sb	16	4
													As	1.4	1
													Be	0.5	0.08
													Cr	10	2
													Pb	4	0.5
													Ni	3	1
													Zn	50	30

DL - Detection Limit
ND - Not detected
(b) - Qualified due to hold time exceedances
STP5 - Soil from test pit #5

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF TEST PIT SOIL SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
STP10	F9135	12/12/84	5.0-6.0	ND(b)*			ND			ND			As	2.7	0.5
													Be	0.7	0.5
													Cr	10	1
													Cu	18	1
													Pb	6	0.5
													Ni	9	1
													Zn	48	1
STP11	F9157	12/12/84	6.0-7.0	ND(b)			ND			ND			As	1.2	0.5
													Ba	26	0.5
													Cr	8	1
													Pb	3	1
STP12	F9156	12/12/84	11.0-12.0	ND(b)			ND			ND			As	1.6	0.5
													Ba	59	0.5
													Cr	6	1
													Pb	2.6	0.5

DL - Detection Limit
ND - Not detected
(b) - Qualified due to hold time exceedances
* - Compound also present in lab reagent blank. Therefore, actual presence and/or quantification is questionable.
STP10 - Soil from test pit #10

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF MONITORING WELL SOILS

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
SMW7	G5071	1/2/85	10.0-18.0	ND			ND			ND			Ba	56	0.2
													Cr	10	1
													Pb	14	5
													Hg	0.1	0.1
SMW8	G5074	1/7/85	10.0-20.0	ND			ND			ND			As	3.1	0.5
													Ba	62	0.3
													Cr	10	2
													Pb	4.7	0.5
SMW9	G5073	1/7/85	14.0-20.0	ND			ND			ND			As	0.9	0.5
													Ba	24	0.3
													Cr	20	2
													Pb	1.8	0.5
SMW10	G5075	1/10/85	3.0-13.0	ND			ND			ND			As	2.1	0.5
													Ba	30.4	0.2
													Cr	8	2
													Pb	2.9	0.5
SMW11	P9142	1/9/85	20.0-28.0	ND(b)			ND			ND			Be	0.20	0.07
													Cr	10	2
													Cu	17	1
													Pb	2.2	0.5
													Ni	5	1
													Zn	31	0.5

DL - Detection Limit
ND - Not detected
(b) - Qualified due to hold time exceedances
SMW7 - Soil from monitoring well #7

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF MONITORING WELL SOILS

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
SMW12	F9143	1/11/85	36.0-43.0	ND(b)			ND			ND			As	1.7	0.5
													Be	0.20	0.07
													Cr	5	2
													Cu	10	1
													Pb	1.7	1
													Ni	3	1
													Zn	29	0.5
SM13B	J2350	7/19/85	45.0-46.0	ND(b)			ND			ND			Ba	31	0.4
													Cr	7.0	4.0
													Pb	3.2	0.5
SM13B DUP	J2351	7/19/85	45.0-46.0	ND(b)			ND			ND			As	40	1.0
													Ba	30	0.4
													Cr	7.0	4.0
													Pb	2.3	0.5
SMW14	G5076	2/1/85	13.0-20.0	ND			ND			ND			As	1.1	1
													Ba	44	0.1
													Cd	4	0.4
													Cr	11	2
													Pb	2.5	0.6
SMW16	G8383	2/20/85	40.0-42.0	ND(b)			ND			ND			As	1.1	1
													Cr	9.1	0.8
													Be	0.2	0.2
													Cu	19	1
													Pb	9	8
													Ni	7	2
													Phenols	0.1	0.1

DL - Detection Limit
ND - Not detected
(b) - Qualified due to hold time exceedances
SMW12 - Soil from monitoring well #12

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF MONITORING WELL SOILS

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
SMW16B	G8385	2/20/85	60.0-62.0	ND			ND			ND			As	1.4	1
													Ba	25	0.3
													Cr	7	0.8
													Pb	2.3	0.6
													Cu	10	1

DL - Detection Limit
ND - Not detected
(b) - Qualified due to hold time exceedances
SMW16B - Soil from monitoring well #16, location B

Table 2

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF LEACHATE SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)
CL1	P9098	12/12/84	NA	ND			ND			ND			ND		
CL2	P9103	12/12/84	NA	ND			ND			ND			Pb	8	5
													Zn	70	10
CL3	P9097	12/12/84	NA	ND			ND			ND			ND		
CL4	P9093	12/12/84	NA	Ethyl-benzene	21	10	ND			ND			Ni	30	20
				Toluene	25	10							Zn	180	10
													Phenols	110	50
CL5	P9094	12/12/84	NA	ND			ND			ND			Pb	7	5

DL - Detection Limit
ND - Not detected
BMDL - Below method detection limit
NA - Not applicable
CL1 - Leachate sample from location #1

Table 3

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF SURFACE WATER

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)
RSW1	F9100	12/2/84	NA	ND			ND			ND			ND		
RSW2	F9099	12/12/84	NA	ND			ND			ND			Zn	30	10
RSW3	F9096	12/11/84	NA	ND			ND			bis(2-ethyl-hexyl phthalate	47*	10	ND		
RSW3S	F9105	12/11/84	NA	ND			ND			ND			ND		
RSW4	F9104	12/11/84	NA	ND			ND			ND			ND		
RSW5	F9102	12/11/84	NA	ND			ND			ND			Pb	10	5
RSW5D	F9107	12/11/84	NA	ND			ND			ND			Pb	BMDL	5

NA - Not applicable
DL - Detection limit
BMDL - Below method detection limit
ND - Not detected
* - Compound also present in lab reagent blank. Therefore actual presence and/or quantification is questionable.
RSW1 - Surface runoff stream sample #1

Table 4

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF SEDIMENT SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
BSED1	P9134	12/12/84	Surface	Methylene chloride	60*	10	ND			ND			As	1.4	0.5
													Be	0.8	0.5
													Cr	6	1
													Cu	9	1
													Pb	9.3	1
													Ni	4	1
													Zn	83	1
BSED2	P9133	12/12/84	Surface	ND(b)			ND			ND			As	2.9	0.5
													Cr	11	1
													Cu	6	1
													Pb	6.9	0.5
													Ni	3	1
													Zn	83	1
BSED3	P9132	12/11/84	Surface	ND(b)			ND			ND			As	0.7	0.5
													Cr	7	1
													Cu	6	1
													Pb	10	0.5
													Ni	4	1
													Tl	0.5	0.5
													Zn	45	1

ND - Not detected
DL - Detection limit
BMDL - Below method detection limit
(b) - Qualified due to hold time exceedances
* - Compound also present in lab reagent blank. Therefore actual presence and/or quantification is questionable.
BSED1 - Surface runoff stream sediment #1

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF SEDIMENT SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppm)	DL (ppm)
BSED3S	P9131	12/11/84	Surface	ND(b)			ND			ND			As	2.3	1
													Be	0.6	0.5
													Cr	7	1
													Cu	7	1
													Pb	13	0.5
													Ni	4	1
													Zn	51	1
BSED4	P9128	12/11/84	Surface	ND(b)			ND			ND			As	1.0	0.5
													Cr	5	1
													Cu	6	1
													Pb	7.9	0.5
													Ni	3	1
													Zn	65	1
BSED5	P9130	12/11/84	Surface	ND(b)			ND			ND			As	1.4	0.5
													Cr	4	1
													Cu	5	1
													Pb	7	0.5
													Ni	3	1
													Zn	56	1
BSED5D	P9129	12/11/84	Surface	ND(b)			ND			ND			As	4	0.5
													Be	1.3	0.5
													Cr	8	1
													Cu	5	1
													Pb	7	0.5
													Ni	4	1
													Zn	100	1

DL - Detection limit
ND - Not detected
NA - Not applicable
BMDL - Below method detection limit
(b) - Qualified due to hold time exceedances
BSED3 - Surface runoff stream sediment #3

Table 5

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF MONITORING WELL WATER

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)
WMW6	J2150	7/12/85	NA	ND			ND			ND			ND		
WMW7	J2140	7/19/85	NA	ND(b)			ND			ND			Zn	50	20
													Phenols	150	50
WMW8	J2141	7/12/85	NA	ND			ND			ND			Zn	30	10
WMW9	J2142	7/23/85	NA	ND(b)			ND			ND			ND		
WMW10	J2143	7/23/85	NA	Methylene chloride(b)	19.1*	2.8	ND			ND			Ni	40	30
WMW11	J2147	7/19/85	NA	ND(b)			ND			bis(2-ethyl-hexyl) phthalate	93.8*	10.0	Phenols	120	50
										Di-n-butyl phthalate	13.4*	10.0			

(a) - Sample lost during sample prep.
DL - Detection limit
ND - Not detected
BMDL - Below method detection limit
NA - Not applicable
(b) - Qualified due to hold time exceedances
* - Compound also present in lab reagent blank. Therefore actual presence and/or quantification is questionable.
WMW6 - Water from monitoring well #6

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF MONITORING WELL WATER

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)
WMW12	J2138	7/23/85	NA	ND(b)			ND			ND			ND		
WMW13	J2144	7/30/85	NA	ND			Phenol	10.7	1.6	bis(2-ethyl-phthalate	56.6	10.6	CN^-	125	25
													Phenols	76	50
WMW14	J2139	7/23/85	NA	ND(b)			ND			ND			Be	1	1
													Cd	10	10
													Cu	20	9
													Zn	100	20
WMW15	J2148	7/26/85	NA	Methylene chloride	11.0*	2.8	ND			ND			Zn	200	30
WMW16	J2145	7/26/85	NA	Methylene chloride	9.0*	2.8	(a)			Benzo(a) pyrene	6.16*	2.6	Phenols(b)	100	50
										bis(2-ethyl-hexyl) phthalate	21*	11			
										Hexachlo-robenzene	3.31	2.0			
WMW16 DUP	J2149	7/26/85	NA	Methylene chloride	13.4*	2.8	Phenol	49.5	1.7	bis(2-ethyl-hexyl) phthalate	18.7*	10	Phenols	93	50

(a) - Sample lost during sample prep.
DL - Detection limit
ND - Not detected
BMDL - Below method detection limit
NA - Not applicable
(b) - Qualified due to hold time exceedances
* - Compound also present in lab reagent blank. Therefore actual presence and/or quantification is questionable.
WMW12- Water from monitoring well #12

Table 6

SUMMARY OF RESULTS

CHEMICAL ANALYSIS OF POTABLE WATER SAMPLES

Sample ID	Lab ID	Date Taken	Depth Sampled (Ft)	Volatile Fraction			Acid Fraction			Base/Neutral Fraction			Metals/Cyanides/Phenols		
				Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)	Compound	Conc. (ppb)	DL (ppb)
WPW1	P9116	1/8/85	NA	ND			ND			ND			Zn	40	10
													CN^-	35	25
WPW2	P9122	1/8/85	NA	ND			ND			ND			CN^-	32	25
WPW3	P9095	1/8/85	NA	ND			ND			ND			CN^-	38	25
WPW4	P9120	1/8/85	NA	ND			ND			ND			Cu	70	20
													Zn	50	10
													CN^-	34	25
WPW5	P9127	1/8/85	NA	Methylene chloride	20*	10	ND			ND			Zn	440	10
			NA	Trichloro-ethylene	98	10							CN^-	30	25
WPW6	P9117	1/9/85	NA	ND			ND			ND			ND		
WPW7	P9125	1/9/85	NA	ND			ND			ND			ND		
WPW8	P9121	1/8/85	NA	ND			ND			ND			Zn	770	10
													CN^-	34	25
WPW9	P9114	1/8/85	NA	ND			ND			ND			Zn	40	10
													CN^-	35	25
WPW10	P9124	1/9/85	NA	ND			ND			ND			Se	6	5
													Zn	90	10

DL - Detection limit
ND - Not detected
NA - Not available
* - Compound also present in lab reagent blank. Therefore actual presence and/or quantification is questionable.
WPW1 - Potable well sample #1

PW5 was resampled by NJDEP; no contaminants were detected.

APPENDIX 2

Responsiveness Summary
Completion of Remedial Investigation/Feasibility Study
Combe Fill North Landfill
Mount Olive Township
Morris County

This Combe Fill North Responsiveness Summary documents the concerns of the public and the Department's responses that were expressed during two public meetings and the public comment period. Meetings were held at the initiation of the Remedial Investigation/Feasibility Study (RI/FS) and at the conclusion of the RI/FS. This Responsiveness Summary is prepared in three sections:

I. RI/FS Initiation Meeting - October 2, 1984
II. RI/FS Completion Meeting - July 1, 1986
Questions/Comments received during the public meeting and comment period, and NJDEP's Responses
III. Remaining Concerns

Attachments

A. Information Package for 10/2/84 Public Meeting
B. List of Attendees at the 10/2/84 Public Meeting
C. Information Package for 7/1/86 Public Meeting
D. List of Attendees at the 7/1/86 Public Meeting
E. Correspondence to NJDEP from Schwartz, Tobia & Stanziale

I. RI/FS Initiation Meeting

A public meeting was held by the New Jersey Department of Environmental Protection (NJDEP) on October 2, 1984 to discuss the initiation of the Remedial Investigation/Feasibility Study (RI/FS) for the Combe Fill North Landfill. Notification of the meeting was accomplished through press releases sent to all newspapers listed in the "Contacts" section of the Community Relations Plan. Meeting notices were also sent directly to all residents and officials listed in the Community Relations Plan. An information package (Attachment A), including an agenda, fact sheet, overview of the community relations program at Superfund hazardous waste sites, and the steps involved in a major hazardous waste site cleanup, was distributed to everyone at the beginning of the meeting. The meeting was attended by approximately 30 people including local and state officials (Attachment B). Dr. Jorge Berkowitz, Administrator for Hazardous Site Mitigation Administration, made opening remarks and introductions. Ms. Grace Singer, Chief of the Bureau of Community Relations, gave an explanation of the community relations program. Mr. Edgar Kaup, Site Manager, presented a site overview and introduced the contractor. Mr. Gary Cusack of Envirosphere Company, Division of Ebasco Services, Inc., made a presentation on the scope of work for the RI/FS. The meeting was then opened for discussion.

After the presentation there were several questions and comments regarding the RI/FS. Following is a summary of the questions/comments and responses.

Question: What is the time frame for this project (RI/FS)?

Response: Optimistically, it is 36 weeks. Realistically, it will take 9 to 12 months to complete.

Comment: Mount Olive Township needs this landfill closed expeditiously and in a practical manner. Another study that does not accomplish this would be a disaster. Our files, studies, etc. are available. We will cooperate in any way possible.

Response: The primary task is to evaluate all existing data. Whenever NJDEP has evidence of a public danger, we can use emergency resources. We do not have to wait until the study is completed. Thus far, we have not seen a public danger. The RI/FS and cleanup process will be implemented as planned.

Question: How far to the east and west of the landfill will you be testing for water contamination?

Response: At this time the exact distance is unknown. We will test as far as required in order to define the plume of contamination.

Question: Could there be a correlation between the coliform contamination in my potable well and my son's hepatitis?

Response: The likelihood is close to nil.

Question: We are presently at step #9 (hiring of contractor for RI/FS) according to the steps involved in a major hazardous waste site cleanup. How long will it take to complete the process (through step #15)?

Response: It will take approximately 9-12 months to get to step #11 (selection of remedial action alternative). The engineering design will take approximately 6-9 months. The time frame required for actual cleanup will depend on what is found during the RI/FS.

Question: What is the direction of flow of the plume?

Response: It is believed to be in the NW direction, but is not yet actually defined.

Question: Has there been consideration of an on-site laboratory capability?

Response: There is constant monitoring during on-site work so that we can take immediate safety measures if necessary. On-site laboratories are biased, site specific, and not quality controlled. They have been tried in the past but the preferred method is to send samples to a laboratory to assure quality control of the data.

Question: Is there a contingency plan? Is there a mechanism for notifying the public in case of volatile air emissions?

Response: The health and safety plan includes an emergency response section which addresses evacuation procedures, notification procedures, etc.. We are very willing to share this plan and will make it available to the local fire department, police department and officials.

Question: Are there any resources to address health impacts to Mt. Olive Township residents, especially those in close proximity to the landfill?

Response: New Jersey has a program for such residents. Anyone who feels impacted can go to a New Jersey Department of Health Clinic and consult with an occupational physician.

Question: How many landfills has Ebasco closed? How effective are these plans?

Response: Remedial action is different from closure. Closure is when the facility has outlived its usefulness and is closed according to environmentally safe standards to ensure no leakage. Remedial action identifies and eliminates the source(s) of contamination now and in the future. This is not classically called closure. After we develop a remedial action plan we must monitor the site for many years. There are a lot of tried and proven methods of treatment and remedial action here and throughout the world.

Question: Do all such plans involve a cap?

Response: No, sometimes a cap is not an acceptable alternative. But there have been good results when caps were utilized. There must be a long-term commitment to the site.

Question: Can a cap be placed on the landfill immediately?

Response: No, a hazardous waste site can not be capped until a Remedial Investigation/Feasibility Study has been completed so that we know what contaminants need to be remediated, as well as the most appropriate cleanup alternatives. A cap would be considered in the evaluation of cleanup options for this site, along with other technologies to remedy the problems.

Comment: I would like to see a list of criteria for this.

Response: That's our legislative mandate. We do not have to reiterate that purpose. That is the reason we exist (i.e. DEP's legislative mission).

Question: After the study is complete, will we be able to use the site for anything?

Response: That depends on the findings from the RI/FS. That is a site specific issue and we are wrestling with this issue now. It is possible that many sites will be useable in the future.

Question: Do you have an overall plan for post implementation/monitoring?

Response: Yes, we will be involved in monitoring, as well as operations and maintenance. It is too early to have specifics, until more is known about what is in the landfill and the selected remedial action plan.

II. RI/FS Completion Meeting

A second public meeting was held by NJDEP on July 1, 1986 to discuss the results of the RI/FS for the Combe Fill North Landfill. Notification of the meeting was accomplished by sending press releases to local and county newspapers, as well as notices to municipal, county, state and federal officials and to all concerned citizens. The RI/FS Report was made available for public review and comment starting June 12, 1986 at the following repositories: Mt. Olive Municipal Building, Mt. Olive Public Library, Hackettstown Free Public Library, Morris County Library in Whippany and the NJDEP in Trenton. The public comment period extended until July 16, 1986 during which time only one written comment was received by the Department. An information package (Attachment C), including the agenda and fact sheet, was distributed to all attendees at the commencement of the meeting. In addition to the NJDEP representatives, approximately 30 people were in attendance (Attachment D). Mr. Anthony Farro, Assistant Director for the Division of Hazardous Site Mitigation, made opening remarks and introductions. Next, Mr. Edgar Kaup, Site Manager, provided an historical overview and a current status report. Mr. Joseph Cleary of Ebasco Services, Inc. discussed the results of the RI/FS and presented the following remedial action alternatives for long-term site remediation:

1. Construction of a security fence around the perimeter of the site and a long-term (30-year) monitoring program.

1b. Sanitary Landfill Closure: Sanitary landfill closure in accordance with RCRA (Resource Conseryation and Recovery Act) subtitle "D" and New Jersey Solid and Hazardous Waste Management regulations. Perimeter security fencing and a long-term monitoring program.

2a. Alternative Water Supply: Creation of a new well field and source of water for the potentially affected communities downgradient of the site. The water supply system would include four wells in the limestone formation aquifer located approximately three miles south of the landfill. Sanitary landfill closure as described in Alternative 1b. Perimeter security fencing and a long-term monitoring program.

2b. Treatment of Existing Water: This entails upgrading the existing water treatment systems at three locations: Village Green Apartments, Netcong and Stanhope. The treatment system would include a combined air stripping-carbon absorption system for removal of organic priority pollutants. Sanitary landfill closure is also included in this alternative. Perimeter security fencing and a long-term monitoring program.

3. Surface Water Control (RCRA Cap) and Alternative Water Supply: A RCRA cap in accordance with RCRA Subtitle "C" requirements, as well as an alternative water supply. Perimeter security fencing and a long-term monitoring program.

4. Surface Water Control (RCRA Cap) and Ground Water Diversion Barrier: A RCRA cap and a slurry wall upgradient of the site which would divert ground water flow around the landfill minimizing leachate generation and the potential for ground water contamination. Perimeter security fencing and a long-term monitoring program.

5. Surface Water Control (RCRA Cap) and Leachate/Ground Water Control: A RCRA cap and a series of ground water extraction wells downgradient of the

landfill to intercept and treat any ground water contamination leaving the landfill. The treated ground water would be discharged to one of the unnamed tributaries to Wills Brook. Perimeter security fencing and a long-term monitoring program.

6. On-site Disposal in RCRA Landfill: Excavation of the solid wastes and on-site disposal in a secure RCRA Landfill. The RCRA landfill would include a cap and a double liner system. This alternative would also include the removal and disposal of any hazardous wastes or drums discovered during the excavation of the landfill.

Mr. Anthony Farro presented Alternative 1b as NJDEP's recommendation for long-term site remediation. The meeting was then opened to the public for comments and questions. Following is a summary of the questions/comments and responses.

II. Questions/Comments Received During the Public Meeting and Comment Period, and NJDEP's Responses

Question: How can Alternative 1b be proposed when you know there are two interconnected aquifers below the landfill?

Response: We have run several analyses on the aquifer and our testing has indicated that no contaminants have left the site via the aquifer.

Comment: SMOTHER conducted tests that revealed selenium and other organic chemicals on and off site. These were not shown in your presentation of contaminants found during the Remedial Investigation.

Response: We sampled approximately 1½ years ago and did not find those contaminants. It is possible, however, that they were present at the time of your sampling. When we developed the study, we were knowledgeable about your study and about six other studies that indicated the presence of contaminants. However, we did not rely on these studies because of the various methodologies employed (i.e. sometimes samples were taken from one well, or from three wells, or from one well three times per year). Different laboratories have different quality assurance/control requirements. None of the previous studies used stainless steel wells; some were pc pipe and some were cast iron pipe. There are localized contaminants that can be picked up during sampling. We have addressed these sampling issues and did not find contaminants during the course of the remedial investigation.

Question:*How many times did you take samples? It is ludicrous to base the results of the RI/FS on one set of gas chromotography GC samples at one point in time.

*There was concern about the adequacy and integrity of sampling and considerable dialogue before a complete answer was given. This issue and the correct response became confused and somewhat lost during the discussion at the public meeting. Therefore, this account extracts and summarizes the concerns and responses that may not be apparent in reading the transcript. Unfortunately, the complete answer appears in several pages following the question in the transcript.

Response: We looked at the results of 65 samples and did not see any contamination. We went back and resampled several monitoring wells. However, we did not discuss this additional sampling because our quality assurance/control program rejected the analysis of the base neutral fractions and, therefore, discarded the entire set of data. It is relevant to know that the volatile organic analyses were acceptable and did not indicate contamination. Additionally, we are going to conduct another round of sampling at the site.

One complete round of samples did meet our standards. The quality assurance/control program is one that allows us to authenticate the data. We are confident that the data is representative of what contaminants are present at the site. You can sample a site indefinitely and get different results each time. We will be backing our decision by our monitoring program.

Explanation of Sampling: We took saturated soil samples from 12 test pits. These were not taken on the same day. We then developed the wells and stabilized them for 72 hours. The purpose of having stainless steel wells is to be able to detect the minutest level of contamination. All samples, including the water samples, were taken on approximately ten different days over a two-month period. In all of the 65 samples taken during the two months of sampling various media, we did not see contaminants. This methodology should more than justify the results of the study.

Comment: We tested an area directly across the street from the landfill and detected 4,000 + ppb of practically everything. According to your map that is upgradient on the other side of Goldmine Road. Redi Crete has a well that is 285 feet deep and the surface is lower than the highest point in the landfill by 40 or 50 feet.

Response: It is not upgradient according to ground water flow patterns. Our deep wells are at the same depth as area potable wells. The upgradient monitoring well is about 160 feet deep. The downgradient well is about 100 feet deep. Again, these wells are in the same aquifer which supplies area potable wells.

Comment: There may be an underground stream and some of that leachate is dropping down not into the plume but into an underground stream and affecting an upgradient site, such as Redi Crete.

Response: We had three upgradient wells; one on Flanders Road and two on site.

Comment: Redi Crete, however, is in the southwest corner almost ½ mile away. You did not drill a well or take samples down there.

Response: There was no need to do so because we found that ground water was not moving in that direction.

Question: Did you sample Redi Crete and detect any contaminants? There is off-site contamination.

Response: Yes we did sample and found low level contamination but we do not know the source. Our report indicates that there is potential for off-site contamination. If there was a plume leaving this site, we would not be recommending Alternative 1b. There is no such evidence at this time. I cannot spend public monies based on the assumption that there will be a problem ten years from now.

Comment: What you are proposing does nothing to mitigate leachate going into the aquifer. It will stop rain water from going through the landfill but that is all.

Response: Our plan will minimize, if not stop, ground water or the plume from leaving the site. To date no contaminants related to the site are leaving the landfill. I cannot spend an additional $20 million because there may be a slim chance that contaminants are going to migrate off site. Our recommended alternative is environmentally sound, not just cost effective.

Question: Why spend $10 million to cap a dump when only $13 million would provide water to 10,000 residents?

Response: If there was proof that area potable wells are being impacted, we would be recommending a water line. The landfill has not contaminated the water supply. Therefore, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) law and regulations do not allow a new water supply unless it is justified. Also, the environmental problems associated with the landfill must be addressed. Our job is to protect people and the environment.

Question: Although the site does not present an immediate threat to the ground water supply, the potential exists for future contamination due to off-site migration. How does Alternative 1b deal with the surface water that has percolated through the landfill over the past 20 years and how does it prevent off-site migration?

Response: This alternative does not prevent off-site migration. However, in the 20 years since the landfill began operating there is no indication that contaminants have reached the aquifer. There is solid waste above and below the ground water table. Mobile contaminants move along with the ground water flow whereas other contaminants are not mobile and remain attached to soil. If there were mobile contaminants in the solid waste (which has been there for 20 years) they would have travelled off site. The two types of action we are recommending address these concerns. The cap will prevent rain water percolation and the generation of leachate. Given that the rate of ground water flow is about 50 feet per year, our monitoring program will alert us to any problems and allow sufficient time to take corrective action, if necessary. The monitoring program will entail sampling of wells on and off site four times per year. If we determine in the future (5,10,15 years from now) that a plume is leaving the site, remedial action would be taken.

Comment: Your concerns for the possibility of future contamination do not stem from what you know to be in the landfill now but what you suspect may be in there and not yet in contact with the ground water?

Response: There are no records of what was dumped at this site.

Question: Will the gasoline tank located in the landfill be removed?...before capping?

Response: Yes, the underground storage tank will be removed during grading.

Question: Is there a way to know what contaminants are in the landfill?

Response: You can not be totally sure but you can monitor for what is suspected to be in the landfill.

Question: What are the depths of the monitoring wells?

Response: There are three deep wells (150', 100' and 86') and six shallow wells.

Comment: Geologically this is a rather unique area. We are in the Reading Prong (on the Schooley's Mountain klippe) which is nothing more than gneiss (ranging 200-330 feet) over limestone. The limestone is the extremely porous lithosil type. It looks like solidified sponge. My potable well is about 350 feet deep and probably is in the limestone. Your report discusses a well system which will draw from the limestone. The Musconetcong River Valley is limestone, Flanders Valley is limestone and I have a feeling that the limestone runs all the way in between. My concern is that fractured gneiss is above the limestone and that a plume may exist undetected by your ground water monitoring wells. I would like you to check this with a seismograph study to see if, in fact, limestone is under there.

Response: I think our geologist's opinion would be that the gneiss is so dense that it can not be penetrated. During the course of drilling the 150 foot upgradient well we hit very tight bedrock gneiss and we had to use a cable tool drill to get through it. (Subsequent discussion with the staff geologist indicates his opinion that although limestone was found to the north and to the west of the site, limestone does not underlay the site. The only absolute method to determine whether limestone is there is to do a boring to that depth.)

Comment: My concern is not regarding a depth of 150 feet but that limestone is at 200-300 feet. If it is in fact lithosil limestone, it is very porous. You should act quickly.

Response: We will consider a seismograph study. The opinion of the project geologist (based on a follow-up discussion of this issue) is that a seismographic survey would not detect whether there is limestone beneath the dense, granitic rock layer.

Question: Is there a possibility that this landfill will be opened again?

Response: I don't think that someone is going to recommend opening a National Priorities List (NPL) site that we are basically closing. However, there is no guarantee that this will not happen sometime in the future. I tend to think that it will not happen. I am sure that you fought it before and that you would fight it again and probably win.

Comment: My well is polluted with contaminants that have not been found in the landfill. My family has a long history in Mt. Olive. Our property is all farm land and I know my relatives did not dump any pollutants on this property. Can anything be done to determine the source of contamination?

Response: During the past 40-50 years many pesticides and chemicals have been used in the farming industry. There have been cases where these pesticides and insecticides have been found in wells. Regarding the area potable wells, the Division of Water Resources has been and will continue to investigate this to determine a source. If sampling indicates that there are levels of contaminants exceeding the drinking water standards, I am sure that the Department will take action. We are familiar with your particular case and know that the Bureau of Safe Drinking Water is investigating this matter.

Comment: When the landfill was in operation, there was a leachate spill that ran down through my pond and killed all my fish. Subsequently the owners built a berm adjacent to and around my property. The berm has deviated surface runoff collected to the south of my property into the Wills Brook which runs into the Musconetcong River. The berm is the only thing that protects my property from the leachate. If you build a fence between my property and the berm, there must be a gate so that I can gain access in order to maintain the berm (as I am the only one who has maintained it for the past 11 years).

Response: Once the cap is constructed, it will prevent water from percolating through the landfill and generating more leachate. We understand that your concern is for the interim period. We did a risk assessment based on leachate analysis from five samples which indicate that it presents no health risk. The fish kill was probably due to the overutilization of oxygen by the organic material in the leachate which entered the pond, thereby not leaving enough oxygen for the fish. There is also a lot of iron in that leachate, causing the orange stain. The likelihood of this happening was much greater ten years ago than it is now. Much of the readily utilizable organic material in the landfill is already decomposed. Most landfills reach a peak of fertile activity in a period of three to five years. The engineering design will begin in four to five months and will take approximately 9-12 months to complete. Construction will start four to five months thereafter. Construction may be phased so that the leachate problem will be addressed right away. That is something that we will have to look into.

Question: From this time (July 1986), how long will it be before the entire project is completed, other than monitoring?

Response: About 2½ to 3 years.

Question: Will this project be funded through its completion (in light of the fact that it is #36 on the NPL and the contamination is much less that suspected)?

Response: Once a study is initiated New Jersey is committed to complete all projects through construction. The ranking of a site does not influence whether a project is completed. The state has and will offer USEPA the funding to complete this project, if necessary. The Department has developed a funding plan that will take us through Federal FY '87 and we are seeking additional funding to get us past that earmark.

Question: Is the "heat off" Combe Fill North to the extent that the timing of the cleanup will be affected?

Response: No, the Department has committed to funding this project, regardless of its ranking. We will proceed at the same rate.

Question: When are you next scheduled to conduct monitoring?

Response: We will sample during the design phase. The full monitoring program will be initiated during construction and conducted throughout and after construction. Because of the concern expressed there should be some monitoring between now and the start of construction.

Question: How many permanent test wells are there?

Response: Eleven.

Question: How much will it cost to do one more round of sampling of these 11 wells?

Response: Approximately $1,500. per sample.

Question: This question pertains to the concerns of the people who want more tests over a longer time period. Will more sampling take place and when?

Response: There will be 11 samples (9 ground water & 2 leachate) taken in July 1986. Results will be made public in September, after the data is determined to be valid by our quality assurance/control program. (Sampling was conducted on August 14, 1986).

Question: What is the maximum distance from the landfill that you tested potable wells?

Response: Approximately one mile.

Question: What is being done to identify off-site contamination in potable wells? What kind of assistance can you give these residents? If there is a source somewhere else, we should investigate and deal with it.

Response: I have been told that some of the wells are periodically tested. This is not being handled by the Division of Hazardous Site Mitigation so I do not know the details. I will look into this and get back to you. (Correspondence was sent from the Division of Hazardous Site Mitigation to the Division of Water Resources (DWR) requesting that this issue be

directly addressed. Subsequent inquiries of this nature are being referred to DWR.)

Question: What good will it do if the results of the July sampling are not available until after the decision on the selected cleanup alternative has been made?

Response: Design work will not start for another four to five months. If the results of the July sampling disprove what we are presenting tonight, there is no reason why we cannot change the "Record of Decision".

Question: Can you be more precise about the on and off-site monitoring program?

Response: It has not yet been developed. We will make it available to the public when it is complete. You may comment on it. It will be designed to give us an early warning signal for movement of a suspected plume.

Comment: Yes, we would like to receive it and perhaps have a public hearing on it. We will give you our input quickly.

Question: Would you buy a property near this landfill?

Response: From an environmental perspective, yes. In terms of health risks, based on our studies of a one in a million cancer risk level, there is no danger in living near this landfill.

Question: Can you guarantee that it is safe to live by or near this landfill?

Response: No guarantees can be made. There is always a potential risk.

Question: There were only ten potable wells tested. Where are these ten wells located and is there a reason why you stopped at ten?

Response: It was a matter of judgement. We selected ten wells in the suspected direction of ground water flow. These should be representative of the area's potable water quality. Had we found contaminants similar to those in the landfill, we would have extended our testing an additional 2,000 or 2,500 feet.

Question: Is there a possibility of leakage, rather than a plume, that may have gone beyond the 1½ mile area that was tested and is causing a greater problem beyond this area?

Response: Based on our findings, we feel that we have tested all the wells that may be impacted by this site.

Question: Will additional potable wells be tested for contamination by the Division of Water Resources to try to determine the source of contamination?

Response: It is my understanding that some sort of study is being done. I will look into it. Also, I will talk with our geologist concerning the area. Additional work will be done, if necessary.

Question: Will the landfill ever be usable for recreational purposes?

Response: I cannot answer that question now. It may be possible at some point in the future. I can not address that because the funding is for remedial action, not recreational purposes.

Comment:* It appears that the present worth for Alternative 1B, which includes estimated capital cost of $10.5 million and annual operation and maintenance costs of 1.6 million, is excessive in light of the work to be performed.

Response: The capital cost of Alternative 1B is primarily the sanitary landfill cover. The capital cost of this alternative is $3.70/square foot based on 65 acres which is within the range of reported costs for this type of cover. To clarify the operation and maintenance, the $1.6 million is not an annual cost but the present worth of the annual operation and maintenance for 30 years at an interest rate of 10 percent. The annual operation and maintenance costs in 1986 dollars is $167,800/year.

Comment: Is a clay cap preferable or necessary for the site in light of increased acceptance of H.D.P. Geomembranes?

Response: Alternative 1B includes a cap consisting of one foot of clean soil, one foot of clay and one foot of topsoil. The clay provides an impermeable barrier to the percolation of water vertically through the solid wastes. Clay is the most common type of cover used for solid waste landfills, particularly for sanitary landfills. The H.D.P. Geomembrane, a thin (40 mils) high density polyethylene synthetic membrane, was included in Alternatives 3,4,5 and 6 (RCRA cap) together with two feet of clay cover. The synthetic liner by itself is not appropriate for solid waste landfills due to the potential for puncture when in contact with solid waste materials such as glass and metal objects. The synthetic liner would require one foot of sand as bed material and two feet of sand as protection material thereby making this cover more expensive then that proposed in Alternative 1B. In addition, a synthetic liner is susceptible to attack by organic vapors, gas, and damage by fire which are the common problems of sanitary landfills.

Comment: The Ebasco report is inconsistent in terms of the amount of clay required for the proposed clay cover.

Response: Alternative 1B incorporates one foot of clay cover, not two feet. The one foot of clay is shown in the report in Figures 2-1 and 3-2, Table 3-2, as well as discussed in various sections of the report. It should be sufficiently clear from reviewing the report that 1 foot of clay cover is proposed. However, Table A-1, which summarizes the screening evaluation of alternatives conducted prior to detailed evaluation and cost estimating, may create some confusion in that two feet of clay liner is identified which should be one foot of clay and one foot of soil. However, the cost of clay and soil was assumed to be the same and therefore the cost shown in Table A-1 is correct. Table A-1 will be changed in the final report to indicate one foot of clay plus one foot of soil.

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*The following comments were received in correspondence from Schwartz, Tobia & Stanziale (See Attachment E).

Comment: The site investigation report appears to conclude that the Combe Fill North Landfill did not accept hazardous waste nor is it a hazardous waste site, thus seriously questioning its status as a "Superfund" site requiring special treatment. In fact, it should be delisted and/or closed as a solid waste facility.

Response: Even though there is no documented evidence of hazardous waste disposal at the site, chemical contamination has been detected in ground water at the site. Since communities downgradient of the site rely on this potable ground water supply, the site was identified as a Superfund site based on the studies conducted as part of the Remedial Action Master Plan (RAMP). The remedial action proposed by the NJDEP and EPA is consistent with State of New Jersey Solid Waste regulations for sanitary landfills and is not proposed to satisfy RCRA regulations for hazardous waste landfills as per the RCRA cap proposed in Alternative 3.

Comment: Clay is not normally included in the drainage ditch surrounding a landfill cover system.

Response: It is good engineering planning to include a liner in the drainage ditch design to ensure that any runoff water will not infiltrate back into the solid wastes and generate leachate. The RCRA guidelines (subpart 264.301) also recommend that clay cover on landfills be extended to the surrounding runoff ditch.

Comment: One must question the derivation of the figure shown in Table A-1 of $12,000 per acre for grading and compaction and $5500 per acre for revegetation.

Response: These unit costs, which were only used in the screening evaluation, were based on average reported costs presented in the "Compendium of Costs of Remedial Technologies at Hazardous Waste Sites", EPA Hazardous Waste Engineering Research Laboratory, Environmental Law Institute (September 1985), which is identified as Reference 6 in the Combe Fill North Report. The average costs reported in this reference were escalated to 1986 prices for the report.

III. Remaining Concerns

There was concern expressed by several residents regarding the potential for off-site contaminant migration that may at some point in the future impact area potable wells. The NJDEP will develop a comprehensive monitoring plan that will be given to Mount Olive Township for review and comment. Additionally, NJDEP will monitor ground water quality before the start of design, during design and during construction. These provisions should be incorporated in the Record of Decision (ROD).

In order to address the concern of residents regarding their potable well contamination that is not correlated to the Combe Fill North Landfill, the Division of Hazardous Site Mitigation has apprised the Division of Water Resources of this issue. Furthermore, the Division of Hazardous Site Mitigation has requested that the Division of Water Resources meet with affected residents and elected officials in order to pursue their investigation of the contaminant sources.

Attachments

A. Information Package for 10/2/84 Public Meeting
B. List of Attendees at the 10/2/84 Public Meeting
C. Information Package for 7/1/86 Public Meeting
D. List of Attendees at the 7/1/86 Public Meeting
E. Correspondence to NJDEP from Schwartz, Tobia & Stanziale

ATTACHMENT A

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
CN 028, Trenton, N.J. 08625

MARWAN M. SADAT, P.E.
DIRECTOR

JORGE H. BERKOWITZ, PH.D.
ADMINISTRATOR

Public Meeting
on
Commencement of
Remedial Investigation/Feasibility Study
at
Combe Fill North Landfill
Tuesday, October 2, 1984
7:00 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, NJ

Agenda

1)	Opening remarks and introduction of DEP staff	Dr. Jorge Berkowitz, Administrator, Hazardous Site Mitigation Administration, NJDEP
2)	Explanation of Community Relations Program	Ms. Grace Singer, Community Relations Program Manager, NJDEP
3)	Overview of current situation and introduction of contractor	Mr. Edgar Kaup, Site Manager, NJDEP
4)	Presentation: commencement of Remedial Investigation/Feasibility Study	Mr. Gary [illegible], Envirosphere Company, Division of Ebasco Services, Inc.
5)	Questions and Answers	

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FACT SHEET

for
Public Meeting
on
Commencement of
Remedial Investigation/Feasibility Study
at
Combe Fill North Landfill
Mount Olive Township
Morris County
October 2, 1984

Site Description: The Combe Fill North Landfill is located on Gold Mine Road just west of Netcong-Flanders Road in Mount Olive Township. The landfill site which is located in a fresh-water marshland covers approximately 102 acres, however, it is estimated that only 65 acres have been used for the disposal of solid waste. Surrounding areas include the residential communities of Netcong and Stanhope to the northeast and Budd Lake to the west. There is some agricultural land in the immediate vicinity. The site is not fenced and there is no treatment or abatement of the leachate. Substantial amounts of leachate are generated at the site due to the great quantity of rain water percolation. Records indicate the presence of asbestos material. The landfill is eroding at a rapid pace, resulting in increasing amounts of exposed garbage.

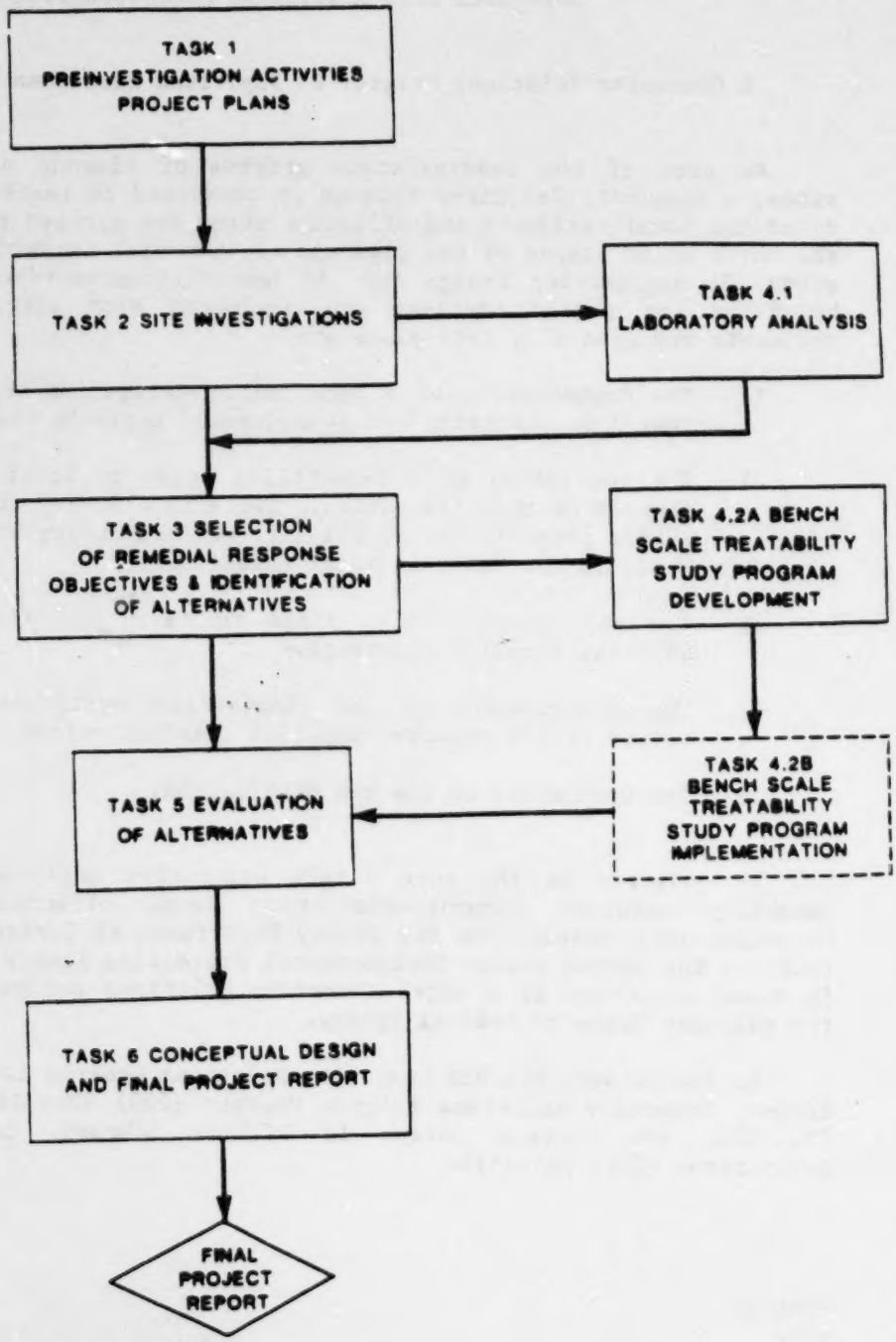
Background: The Combe Fill North Landfill began operating in 1966 for the disposal of municipal, vegetative, and industrial (non-chemical) wastes along with minimal amounts of dry sewage sludge. Currently the landfill is not in operation, however, proper State closure procedures have not been implemented because Combe Fill Corporation filed for bankruptcy in September 1981. From 1969 to 1978 the landfill was operated by Morris County Landfill Incorporated. In September 1978, ownership was transferred to the Combe Fill Corporation which operated the landfill until January 1981 when the New Jersey Department of Environmental Protection (NJDEP) denied an expansion request and operations ceased. NJDEP issued several Notices of Prosecution to the landfill operators for improper intermediate landfill cover which resulted in windblown debris on and off site, contact of solid waste with uncontrolled ground water, and inadequate leachate control. The results of ground water sampling both on and off site has indicated the presence of numerous organic contaminants. The majority of the population surrounding the landfill depends on private or municipal ground water wells for their potable water supply.

Over...

Status: On November 21, 1983, NJDEP signed a Cooperative Agreement with the United States Environmental Protection Agency to commit $371,800 for a Remedial Investigation/Feasibility study (RI/FS). In August 1984, NJDEP awarded the contract for performance of the RI/FS to Ebasco Services Incorporated of New York City. The scope of work will involve the following activities:

- Evaluation of all available background information, confirmation of the level of protection to be worn by on-site workers during investigations, and preparation of a Health and Safety Plan, Field Sampling Plan and Quality Assurance/Quality Control Plan for site activities.
- Identification, as far as possible, of the type, source and location of hazardous wastes disposed of at the site.
- Determination of the nature, extent and severity of ground water contamination beneath the site and the surrounding areas.
- Determination of the nature, extent and severity of soil contamination.
- Determination of the nature, extent and severity of surface water contamination on site and in the surface streams and water bodies impacted by the site.
- Air monitoring for the determination of the nature and extent of gaseous emissions.
- Selection of remedial response objectives and identification of alternatives.
- Evaluation of alternatives and selection of the most environmentally sound and cost-effective remedial action.
- Development of the conceptual design for the selected remedial action and preparation of the final report.

TASK ACTIVITY NETWORK
COMBE FILL NORTH LANDFILL FEASIBILITY STUDY



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

HAZARDOUS SITE MITIGATION ADMINISTRATION

A Community Relations Program at Superfund Hazardous Waste Sites

As part of the federal/state program of cleanup at hazardous waste sites, a Community Relations Program is conducted to receive local input and to advise local residents and officials about the planned remedial actions at the three major stages of the cleanup: 1) remedial investigation/feasibility study 2) engineering design and 3) removal/treatment/construction. Local briefings and public meetings are conducted with elected officials and residents and generally take place at:

1) The commencement of a remedial investigation/feasibility study so that local concerns can be addressed early in the process.

2) The completion of a feasibility study to discuss the alternative courses of remedial action. There is a 30-day comment period after public presentation of the alternatives during which the feasibility study is available in local repositories.

3) The engineering design stage to carry out the mandates of the selected remedial alternative.

4) The commencement of the removal/treatment/construction stage to advise of the expected physical remedial action.

5) The completion of the remedial action.

In addition to the more formal activities outlined above, there is generally informal communication with local officials and residents. Depending upon whether the New Jersey Department of Environmental Protection (DEP) or the United States Environmental Protection Agency (EPA) has the lead in remedial action at a site, community relations activity is conducted by the relevant State or Federal agency.

In New Jersey, the DEP Community Relations Program is conducted by Grace Singer, Community Relations Program Manager (609) 984-3141/4892. At Region II, EPA, the contact person is Lillian Johnson, Community Relations Coordinator (212) 264-2515.

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5/84

STEPS INVOLVED IN A MAJOR HAZARDOUS WASTE SITE CLEANUP

(1) Site Identified and Referred	(2) Initial Site Investigation	(3) Secure Site	(4) Site Analysis Evaluation and Assessment
(5) Prioritization	(6) Determination of Lead	(7) Community Relations Plan Activated	(8) Signing of Contract or Cooperative Agreement
(9) Hiring of Contractor for Remedial Investigation/Feqsibility Study	(10) Preparation of Feasibility Study	(11) Selection of Remedial Action Alternative	(12) Hiring of Contractor for Engineering Design
(13) Hiring of Construction/ Removal Cleanup Contractor	(14) Cleanup Evaluation	(15) Contractor Audit and Close out	

New Jersey Department of Environmental Protection
5/84

Over. . .

ATTACHMENT B

N.J. Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration
Public Meeting to Discuss Commencement of
Feasibility Study/Remedial Investigation
at Combe Fill North
Hazardous Waste Superfund Site
Mt. Olive Township, Morris County, New Jersey
Tuesday, October 2, 1984
7:00 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, New Jersey

	NAME	AFFILIATION	ADDRESS
1.	[illegible]	[illegible]	169 Mt Olive Road Flanders NJ
2.	[illegible]	[illegible]	22 Flanders Netcong Rd Flanders
3.	RANDALL CARTER	" "	114 FLANDERS-NETCONG RD FLANDERS
4.	Millie Spird	President	10's " " " "
5.	Richard F. Eckhoff	"	23 Corg Pd. Flanders
6.	Charles & Karen Rupp		96 Brooklyn Rd Stanhope
7.	Catherine Wanderer		37 Manufacturers Rd Fl
8.	[illegible]		Po Box
9.	Ron Parks		Record Star Chronicle
10.	Marlene Timm		Star Ledger
11.	[illegible]		[illegible]
12.	John A. Zurko		Mt Olive Twp. [illegible]
13.	[illegible]		[illegible]

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	NAME	AFFILIATION	ADDRESS
14.			
15.			
16.	TIM FITSCHEN	Sr. Geologist	Flour Co.
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N.J. Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration
Public Meeting to Discuss Commencement of
Feasibility Study/Remedial Investigation
at Combe Fill North
Hazardous Waste Superfund Site
Mt. Olive Township, Morris County, New Jersey
Tuesday, October 2, 1984
7:00 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, New Jersey

	NAME	AFFILIATION	ADDRESS
1.			
2.			
3.			
4.			
5.	Bill Taylor	Dean Gallo for Congress	Parsippany
6.	LARRY BROWN	COUNCIL PRESIDENT	MT. OLIVE
7.	Harold HATTON	S M O T H E R	
8.	BERNARD ARLES	S.M.O.T.H.E.R	27 RICHARD D- FLANDERS. N.J
9.			
10.			
11.			
12.			
13.			

N.J. Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration
Public Meeting to Discuss Commencement of
Feasibility Study/Remedial Investigation
at Combe Fill North
Hazardous Waste Superfund Site
Mt. Olive Township, Morris County, New Jersey
Tuesday, October 2, 1984
7:00 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, New Jersey

	NAME	AFFILIATION	ADDRESS
1.	Charles & Karen Rupp		96 Brooklyn Rd Stanhope
2.	Richard J. Ehret Jr.	Resident	23 Corry Rd, Flanders
3.	[illegible]	[illegible]	[illegible]
4.	Pat Dillon	[illegible]	Kathleen Road Succasunna N.J.
5.	Alan Kelly	N.J. Assembly Dist 26	
6.	[illegible]	[illegible]	[illegible]
7.	Edw. J. Langan	Resident	Flanders NJ
8.	Joe Perrino	County Hill	Stephens St. Rt. 46. Hacketts
9.	Jeffrey L. Rosen	[illegible]	[illegible]
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11.			
13.			

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ATTACHMENT C

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Hazardous Site Mitigation

Public Meeting
on
Results of
Remedial Investigation/Feasibility Study
at
Combe Fill North Landfill
Mount Olive Township
Morris County
Tuesday, July 1, 1986
7:30 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, NJ

AGENDA

1.	Opening Remarks and Introductions	Mr. Anthony Farro, Asst. Director Division of Hazardous Site Mitigation
2.	Historical Overview and Current Status	Mr. Edgar Kaup, Site Manager Division of Hazardous Site Mitigation
3.	Presentation: Remedial Investigation/ Feasibility Study	Mr. Joseph Cleary Principal Environmental Engineer Ebasco Services, Inc.
4.	NJDEP Recommended Alternative	Mr. Anthony Farro
5.	Comments & Questions	At this time, the floor will be open for comments and questions.

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

FACT SHEET

for
Public Meeting
on
Results of
Remedial Investigation/Feasibility Study
at
Combe Fill North Landfill
Mount Olive Township
Morris County
July 1, 1986

Site Description: The Combe Fill North Landfill is located on Gold Mine Road just west of Netcong-Flanders Road in Mount Olive Township. The landfill site which is located in a fresh-water marshland covers 102 acres, however, only approximately 65 acres have been used for the disposal of solid waste. The local communities of Netcong, Stanhope and Budd Lake are located downgradient of the site and rely on ground water supplies for potable water. There is some agricultural land in the immediate vicinity, however, most of the adjacent land is wooded or wooded marshland. Leachate is generated at the site due to rain water percolation, and there is no treatment or abatement of the leachate. The landfill is eroding, resulting in increasing amounts of exposed garbage. Presently, the site has an entrance gate but is not fenced.

There are two aquifers upgradient of the site which flow to the northwest: 1) a shallow, unconfined aquifer in the surficial glacial moraine deposits and 2) a deeper, semiconfined aquifer in the lower portions of the glacial deposits and upper zone of the gneissic bedrock. The two aquifers are interconnected below the landfill and become one aquifer.

Background: The Combe Fill North Landfill began operating in 1966 for the disposal of municipal, vegetative, and industrial (non-chemical) wastes along with minimal amounts of dry sewage sludge. From 1969 to 1978 the landfill was operated by Morris County Landfill Incorporated. In September 1978, ownership was transferred to the Combe Fill Corporation which operated the landfill until January 1981 when the New Jersey Department of Environmental Protection (NJDEP) denied an expansion request and operations ceased. Currently the landfill is not in operation, however, proper closure procedures have not been implemented because Combe Fill Corporation filed for bankruptcy in September 1981. NJDEP issued several Notices of Prosecution to the landfill operators for improper intermediate landfill cover which resulted in windblown debris on and off site, contact of solid waste with ground water, and inadequate leachate control.

On November 21, 1983 NJDEP signed a Cooperative Agreement with the United States Environmental Protection Agency (USEPA) for a Remedial Investigation/Feasibility Study (RI/FS) at the site. In August 1984 NJDEP awarded the contract for performance of the RI/FS to Ebasco Services Incorporated of New York City. The cost of this study is approximately $720,000.

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Status: The Draft Feasibility Study was completed in June 1986 and the remedial action alternatives are presently being evaluated by NJDEP and USEPA. The Report on the Remedial Investigation/Feasibility Study has been available for public review and comment since June 12th at the following repositories: Mt. Olive Municipal Building, Mt. Olive Public Library, Hackettstown Free Public Library, Morris County Library in Whippany and the NJDEP in Trenton. The public comment period extends until July 16, 1986. Comments regarding the study should be mailed to Janice Haveson, NJDEP, Office of Community Relations, 432 E. State Street, Trenton, NJ 08625. After consideration of all public comments, NJDEP and USEPA will determine the most environmentally sound and cost-effective remedial alternative. In the fall of 1986 a Record of Decision, specifying the selected long-term cleanup alternative for the Combe Fill North site, will be signed by USEPA and NJDEP. Of the 97 New Jersey sites on the National Priorities List, the Combe Fill North Landfill site is ranked 36th.

Summary of Remedial Investigation/Feasibility Study

Objectives: The RI/FS included the following tasks:

- Identification of the type, source and location of hazardous wastes disposed of at the site;
- Determination of the nature, extent, and severity of ground water, soil and surface water contamination;
- Air monitoring to determine the nature and extent of gaseous emissions;
- Identification and evaluation of cleanup alternatives;
- Evaluation of the most environmentally sound and cost-effective alternative;
- Development of the conceptual design for the selected remedial action.

Remedial Investigation Results: Several contaminants, at levels below existing health risk guidelines, were identified during the Remedial Investigation including:

- Soil: Lead, Mercury and Methylene Chloride
- Leachate: Ethylbenzene and Toluene
- Ground water (Monitoring Wells): Phenol, Phthalate and Cyanide
- Ground water (Potable Wells): Methylene Chloride, Trichloroethylene and Selenium
- Surface water: Phthalates and Lead

The results of the Risk Assessment concluded that the low levels of contamination detected in on-site monitoring wells do not pose any health risk at this time. Although the site does not present an immediate threat to the local ground water supplies, a potential exists for future off-site contaminant migration downgradient of the landfill. It is expected that any contaminant migration would be slow given the slow ground water velocity and the fact that on-site contaminants have not been detected in any off-site potable wells.

Remedial Action Objectives of the Feasibility Study: The objectives require the development of mitigative measures to:

- Ensure that the potential ground water contamination from the landfill will not effect the water supply wells downgradient of the landfill site.

- Prevent leachate from contacting people through surface water migration, direct contact, or chemical volatilization. It is recommended that additional ground water sampling be conducted to determine whether there is the potential for future contaminant release.

Remedial Alternatives for Long-Term Site Remediation: The following alternatives for long-term site cleanup were identified and evaluated:

- Alternative 1 - Construction of a security fence around the perimeter of the site and a long-term (30-year) monitoring program.

- Alternative 1B - Sanitary Landfill Closure: Sanitary landfill closure in accordance with RCRA (Resource Conservation and Recovery Act) Subtitle "D" and New Jersey Solid and Hazardous Waste Management regulations. Perimeter security fencing and a long-term monitoring program.

- Alternative 2A - Alternative Water Supply: Creation of a new well field and source of water for the potentially affected communities downgradient of the site. The water supply system would include four wells in the limestone formation aquifer located approximately three miles south of the landfill. Sanitary landfill closure as described in Alternative 1B. Perimeter security fencing and a long-term monitoring program.

- Alternative 2B - Treatment of Existing Water: This entails upgrading the existing water treatment systems at three locations: Village Green Apartments, Netcong and Stanhope. The treatment system would include a combined air stripping-carbon absorption system for removal of organic priority pollutants. Sanitary landfill closure is also included in this alternative. Perimeter security fencing and a long-term monitoring program.

- Alternative 3 - Surface Water Control (RCRA Cap) and Alternative Water Supply: A RCRA cap in accordance with RCRA Subtitle "C" requirements, as well as an alternative water supply. Perimeter security fencing and a long-term monitoring program.

- Alternative 4 - Surface Water Control (RCRA Cap) and Ground Water Diversion Barrier: A RCRA cap and a slurry wall upgradient of the site which would divert ground water flow around the landfill minimizing leachate generation and the potential for ground water contamination. Perimeter security fencing and a long-term monitoring program.

- Alternative 5 - Surface Water Control (RCRA Cap) and Leachate/Ground Water Control: A RCRA cap and a series of ground water extraction wells downgradient of the landfill to intercept and treat any ground water contamination leaving the landfill. The treated ground water would be discharged to one of the unnamed tributaries to Wills Brook. Perimeter security fencing and a long-term monitoring program.

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- Alternative 6 - On-Site Disposal in RCRA Landfill: Excavation of the solid wastes and on-site disposal in a secure RCRA landfill. The RCRA landfill would include a cap and a double liner system. This alternative would also include the removal and disposal of any hazardous wastes or drums discovered during the excavation of the landfill.

NJDEP Recommended Alternative

The NJDEP recommends Alternative 1B, RCRA Subtitle "D" closure of the 65 acres which were used for landfilling at the Combe Fill North site. Closure would be in accordance with the New Jersey Solid and Hazardous Waste Management Regulation 7:26-2.9 Closure and Post-Closure Care of Sanitary Landfills. The closure would include grading and compaction, final cover, vegetation, soil erosion and sediment control, and a methane gas venting system. A security fence will be constructed around the perimeter of the 102-acre landfill. There will be a long-term (30-year) monitoring program of on-site wells. The major construction components of the sanitary landfill closure system are summarized below:

- Grading and compaction of the 65-acre area;
- One foot common borrow material;
- One foot clay cover;
- Six inch borrow cover;
- Six inch topsoil and grass seeding;
- Drainage system including perimeter ditches and corrugated metal pipes; and
- Methane gas venting system including gravel trenches, venting pipes and vent valves.

The recommended alternative will provide the following environmental and public health benefits:

- Minimize the surface water and rainfall infiltration and associated leachate generation;
- Minimize air pollution;
- Minimize methane gas migration; and
- Prevent human direct contact with solid wastes.

If you have any questions, please contact Janice Haveson of NJDEP's Office of Community Relations at (609) 984-3081.

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

HAZARDOUS SITE MITIGATION ADMINISTRATION

A Community Relations Program at Superfund Hazardous Waste Sites

As part of the federal/state program of cleanup at hazardous waste sites, a Community Relations Program is conducted to receive local input and to advise local residents and officials about the planned remedial actions at the three major stages of the cleanup: 1) remedial investigation/feasibility study 2) engineering design and 3) removal/treatment/construction. Local briefings and meetings are conducted with elected officials and residents and generally take place at:

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In New Jersey, the DEP Community Relations Program is directed by Grace Singer, Chief, Office of Community Relations (609) 984-3081. At Region II, EPA, the contact person is Lillian Johnson, Community Relations Coordinator (212) 264-2515.

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Over. . .

STEPS INVOLVED IN A MAJOR HAZARDOUS WASTE SITE CLEANUP

(1) Site Identified and Referred	(2) Initial Site Investigation	(3) Secure Site	(4) Site Analysis Evaluation and Assessment
(5) Prioritization	(6) Determination of Lead	(7) Community Relations Plan Activated	(8) Signing of Contract or Cooperative Agreement
(9) Hiring of Contractor for Remedial Investigation/Fesibility Study	(10) Preparation of Feasibility Study	(11) Selection of Remedial Action Alternative	(12) Hiring of Contractor for Engineering Design
(13) Hiring of Construction/ Removal Cleanup Contractor	(14) Cleanup Evaluation	(15) Contractor Audit and Close out	

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS SITE MITIGATION

Public Meeting to Discuss Results of Remedial Investigation/Feasiblity Study

at
Combe Fill North Landfill
Tuesday, July 1, 1986
7:30 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, NJ

	NAME	AFFILIATION	ADDRESS
1.	[illegible]	[illegible]	[illegible]
2.	Barbara A Sussey	Twp Council	2 Carol Ct, Budd Lake
3.	Eric C Ulm	[illegible] Mt Olive HS	14 Coursen Way Morris Plains, NJ 07950
4.	Ellie Gaiz	Resident	347-0956
5.	EARL SPINO	RESIDENT	347-3134
6.	Virginia Park	North Jersey Advertiser Translation	347-5401
7.	Tom Everitt	DEP	292-7875
8.	Gene Nigosh	Sirotkin + Zuckerbrot Inc.	377 Rte 17 Hasbrouck Heights, NJ 07604
9.	STEVE SINOTA		33 CORPORATE CT. BRIDGEWATER, NJ
10.	John Cline		56 Mountain Terrace Stanhope, NJ 07874
11.	Charlotte Wilson	Resident & West Morris Star Journal	53 Woodline Ave. Budd Lake, NJ 07828
12.	FRANK MATTEO	TWP OF MT OLIVE HEALTH OFFICER	BUDD LK HTS RD BUDD LAKE NJ
13.	LISA LASHWAY	TWP Clerk MT Olive Twp	44 Budd Lk Hts Rd BUDD LAKE, NJ 07828

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS SITE MITIGATION

Public Meeting to Discuss Resules of Remedial Investigation/Feasiblity Study

at
Combe Fill North Landfill
Tuesday, July 1, 1986
7:30 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, NJ

	NAME	AFFILIATION	ADDRESS
1.	[illegible]	NJDEP	CN029, T[illegible], 08625
2.	Frederick Miller	NJDEP	CN029 TRENTON 08625
3.	HAROLD HATTON	Resident S.M.O.T.H.E.R.	2 Rockwood Rd FLANDERS, 07836
4.	[illegible]	WMTE	MORRISTOWN
5.	Thomas Everett	NJDEP	Trenton
6.			
7.	PAT DILLON	FORAN ZIMMER Legislative	Rockaway Mall Succasunna
8.	Richard Salkico		
9.	[illegible]	[illegible]	[illegible]
10.	[illegible]	[illegible]	[illegible]
11.	Jeffrey K Johnson	RESIDENT SMOTHER	21 Jacynda Rd FLANDERS NJ 07
12.	EARL DAVIS	RESIDENT	10 FLANDERS-NETCONG RD FLANDERS NJ 07
13.	Niall M'Stay	Resident	72 Flanders - Drakestown

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	NAME	AFFILIATION	ADDRESS
14.	Pat Dillon	Senator Franz. Assumption Gen. Mgr.	Highway Mail Communications
15.	Rosemary & Richard Eckel	Resident	Eight Flags
16.	Jeffrey L. Pittman	Resident	Jacksonville Fla.
17.	Meg Fry	N.E. Chronicle	
18.	[illegible] Emmert	Assemblyman	119 Main ST Flemington N.J.
19.	[illegible]	[illegible]	Hillsborough Florida
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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS SITE MITIGATION

Public Meeting to Discuss Results of Remedial Investigation/Feasiblity Study

at
Combe Fill North Landfill
Tuesday, July 1, 1986
7:30 p.m.
Mt. Olive Municipal Building
Route 46
Budd Lake, NJ

	NAME	AFFILIATION	ADDRESS
1.	[illegible]	[illegible]	
2.	[illegible]	[illegible]	
3.	Charlotte Wilson	West Morris Star Journal	
4.			
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ATTACHMENT E

LAW OFFICES
SCHWARTZ, TOBIA & STANZIALE
A PROFESSIONAL ASSOCIATION
22 CRESTMONT ROAD
MONTCLAIR, NEW JERSEY 07042

THEODORE A SCHWARTZ
CHARLES A STANZIALE JR *
RONALD L TOBIA**
KENT A F WEISERT
WARREN B KASDAN
BEN H BECKER
JOSEPH S OBERWAGER*
STEVEN R WEINSTEIN***
GARY S ROSENSWEIG
DAMON R SEDITA****
RAYMOND T LYONS JR
JOSEPH M CAMPISANO
FRANK R CAMPISANO
ELIZABETH A JOYCE°
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MEMBER OF NY BAR*
MEMBER OF FLA BAR**
MEMBER OF D C BAR***
MEMBER OF CAL BAR****
MEMBER OF COLO BAR°

July 15, 1986

Ms. Janice Haveson
New Jersey Department of Environmental
Protection
Office of Community Relations
432 East State Street
Trenton, NJ 08625

RE: Combe Fill North Landfill
Remedial Investigation/Feasibility Study

Dear Ms. Haveson:

This letter is submitted in response to the Remedial Investigation/Feasibility Study prepared by Ebasco Services, Inc. relative to the Combe Fill North Landfill. The public comment period expires July 16, 1986, on the project, and we would appreciate inclusion of the within comments as part of the public record.

In reviewing the results of the site investigation and the remedial recommendation made by the Department of Environmental Protection, it appears that the present worth cost for Alternative 1B, which includes estimated capital costs of $10.5 million and annual operation and maintenance costs of $1.6 million, is excessive in light of the work to be performed.

The largest single component of closure costs is for the installation of a clay cap to minimize exposure to contaminants and reduce leachate generation. The initial question we raise is whether a "clay cap" is either preferable

or necessary for the site. The use of H.D.P. Geomembranes as part of a long-term closure plan is gaining increasing acceptance in the scientific and regulatory community. The Ebasco report makes no attempt to evaluate the use of this type of membrane at the Combe Fill North site and whether it will provide the same environmental benefits at less cost than the clay cap. Such an evaluation should be performed before the decision is made that a clay cap is a preferred alternative.

Further with regard to proposed clay cover, the Ebasco report is inconsistent in terms of the amount of clay required. Table A-1 proposes a two-foot thick clay liner with estimated quantities of 210,000 cubic yards. Tables B-2 and C-3 show estimated quantities of 105,000 cubic yards for the clay layer, apparently based on the premise that only one foot of clay is required. In fact, the latter figure should be the correct one. One foot of compacted clay as final cover is a standard requirement of a solid waste facility Certificate of Registration. No sound reason exists for the placement of an additional foot of clay. The Ebasco estimates require a downward revision in this cost component. The site investigation report appears to conclude that the Combe Fill North site did not accept hazardous wastes nor is it a hazardous waste site, thus seriously questioning its status as a so-called "Superfund" site requiring any special treatment. In fact, it should be delisted and/or closed as a solid waste facility averting the necessary expenditure of public funds.

A similar problem arises in the construction of the proposed drainage system. Table B-2 and Table C-3 propose the use of a two-foot thick clay liner in the drainage system. No reason is given for the use of a clay layer in the drainage system. To our knowledge, clay is not normally included as an element of such a drainage system and is certainly not required in a two-foot thick layer.

The lack of a breakdown on the various construction components in terms of the work to be performed and the basis for the cost estimates makes the critique difficult. One must question how the figure shown in Table A-1 of $12,000 per acre for grading and compaction over the 65-acre site was derived. The same table shows revegetation costs estimated at $5,500 per acre which is far in excess of experience at other sites.

While our comments are not as exhaustive as we might like them to be, we hope to impress upon the Department the need for further information relative to the costs of the proposed remedial alternative. We ask that Ebasco be required to submit such information and have same be made publicly available prior to final selection of the remedial alternative.

In closing, we thank you for the opportunity to submit the above comments and trust that they will be given careful consideration.

Very truly yours,

SCHWARTZ, TOBIA & STANZIALE

BY: Steven T. Singer

STS:s